

UNIVERSITY OF CALIFORNIA

SCRIPPS INSTITUTION OF OCEANOGRAPHY

PHYSICAL AND CHEMICAL DATA

CalCOFI Cruise 7712
29 November - 20 December 1977

CRUCERO AH-7712, JD-7712
29 de noviembre-20 de diciembre 1977

CalCOFI Cruise 7801
5 January - 1 February 1978

CRUCERO AH-7801, JD-7801
5 de enero-1 de febrero 1978

CalCOFI Cruise 7803
17 February - 15 March 1978

CRUCERO AH-7803, JD-7803
17 de febrero-15 de marzo 1978

CalCOFI Cruise 7804
29 March - 26 April 1978

CRUCERO AH-7804, JD-7804
29 de marzo-26 de abril 1978

Sponsored by

Marine Research Committee

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Approved for distribution:

W. A. Nierenberg
W. A. Nierenberg, Director

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INTRODUCTION

The data in this report were collected during Cruises 7712*, 7801, 7803, and 7804 of the California Cooperative Oceanic Fisheries and Investigations (CalCOFI) program aboard the RV David Starr Jordan, National Marine Fisheries Service, and the RV Alejandro de Humboldt Instituto Nacional de Pesca of the Mexican Federal Government. The report preceding this one in the series was SIO Ref. 80-21 which included data for 1972.

These data were collected and processed by personnel of the Data Collection and Processing Group, Marine Life Research Group (DCPG**, MLRG), Scripps Institution of Oceanography, the Southwest Fisheries Center, National Marine Fisheries Service (NMFS), and the Instituto Nacional de Pesca (INP), various branches.

STANDARD PROCEDURES

Hydrographic Cast Data

Most of the hydrographic casts consisted of 18 Nansen bottles. At most stations the maximum sampling depth was 500 meters, bottom depth permitting. Temperature, salinity, oxygen, and nutrients were determined for all depths on each station.

At selected stations 10 meter bottles were cast with samples being taken for temperature, salinity, oxygen, and nutrients.

In general, paired protected reversing thermometers were used to determine temperatures which were recorded in hundredths of a Celsius degree. Unless otherwise noted, temperatures determined using unprotected (pressure) thermometers or surface "bucket" thermometers were recorded to tenths of a degree. Sample bottles used below 100 meters were equipped with unprotected thermometers for depth determination.

Salinity values on both ships for all cruises included, were determined using models 6220 and 6230 Hytech (now Grundy Environmental Systems, Inc.) inductive salinometers. A very few samples collected on the Humboldt during 7804 were analyzed on an

* The first two digits of the cruise designator represent the year and the second two digits the month of the cruise.

** Now the Physical and Chemical Oceanographic Data Facility (PACODF).

INTRODUCCION

Los datos de este informe fueron obtenidos durante los cruceros 7712*, 7801, 7803, y 7804 realizados dentro del programa de cooperación científico-técnico entre CalCOFI (California Cooperative Oceanic Fisheries Investigations) y el Instituto Nacional de Pesca del Departamento de Pesca** de México, a bordo del B/I David Starr Jordan, del National Marine Fisheries Service de los Estados Unidos y el B/I Alejandro de Humboldt, del Departamento de Pesca, México. El informe precedente a éste en la serie era el SIO Ref. 80-21, que incluye datos para 1972.

Estos datos fueron colectados y procesados por el personal del Data Collection and Processing Group del Marine Life Research Group (DCPG***, MLRG) del Scripps Institution of Oceanography, y por el personal del Southwest Fisheries Center del National Marine Fisheries Service (NMFS), y del Instituto Nacional de la Pesca (INP) del Departamento de Pesca.

METODOS

Obtención de Datos Hidrográficos

El mayor número de lances realizados se efectuaron con 18 botellas, muestreándose la mayoría de las estaciones hasta una profundidad máxima de 500 metros, cuando la profundidad lo permitía. Se determinó en todas las profundidades de cada estación temperatura, salinidad, oxígeno, y nutrientes. Se seleccionaron también estaciones para el muestreo a 10 metros de profundidad, para la toma de estos datos.

Para determinar temperatura se utilizaron por lo general termómetros de inversión dobles, registrándose ésta en grados centígrados, con aproximación centésimos. La temperatura superficial se determinó empleando termómetros de cubeta no protegidos, registrándola en décimas de grados. Para profundidades mayores de 100 metros se equiparon con termómetros no protegidos.

La salinidad fue determinada utilizando salinómetros de inducción modelos 6220 y 6230 Hytech (ahora Grundy Environmental Systems, Inc.). Algunas pocas muestras colectadas en el Humboldt durante 7804

* Los primeros dos dígitos representan el año y los dos que siguen, el mes en que se efectuó el crucero.

** Ahora llamado la Secretaría de Pesca.

*** Ahora llamado Physical and Chemical Oceanographic Data Facility (PACODF).

Autolab inductive salinometer. Except for a few major malfunctions when salinometers could no longer be used, problems consisted of bubbles in the cells, excessive drift (samples were rerun) and stirring motor breakdowns. With the exception of a few 10 meter samples, all samples were analyzed at sea.

The salinity values were recorded and reported to three decimal places, provided accepted standards were met. If only one determination per sample was obtained, or there was doubt concerning the accuracy of the analytical results, the salinities were reported to two decimal places.

Dissolved oxygen was determined by the Winkler method as modified by Carpenter (1965), using the equipment and procedure outlined by Anderson (1971). On Cruise 7804-J, problems associated with equipment malfunctions and at times poor pickling procedures resulted in unreliable data. Data for these stations have been omitted.

Phosphate, silicate, nitrite, and nitrate were determined using an automated analyzer consisting of the following components:

Sampler: A.H. Thomas Model 253 Little with a 20 position sampling rack.

Proportioning

Pump: Technicon^R AutoAnalyzer^R II Proportioning Pump with air bar.

Detectors: Hitachi Model 100-10 spectrophotometers with flow through cell adaptors.

Recorders: Hitachi Model 056 two-pen recorders with felt tip pens.

The procedures used are basically those described in Atlas *et al.* (1971). There were very few problems associated with the silicate and nitrate analyses. In general, these data were processed in a routine manner. Nitrite tend to vary between poor and very poor after the first week of each cruise depending on whether or not contamination occurred when the sample bottles were not routinely cleaned with hydrochloric acid. When contamination was evident, the typically "high" nitrite values were omitted for the station and the tabulated nitrate value is nitrate plus nitrite. This tabulated value is probably closer to the correct value than had a correction with the "high" nitrite been made.

se analizaron con un salinómetro de inducción Autolab. Excepto por algunos malos funcionamientos en que ya se podían utilizar los salinómetros, problemas consistían de la formación de burbujas en las celdas, excesivas partículas y mal funcionamiento del motor (estos muestreos se hicieron de nuevo). Con la excepción de algunas muestras de 10 metros, todas fueron analizadas a bordo.

Los valores de salinidad se registraron y se reportaron en milésimas de aproximación, de acuerdo con el procedimiento estándar aceptado. Cuando sólo se realizó una determinación por muestra ó había una duda respecto a la confiabilidad de los datos, la salinidad se reportó en centésimos.

El oxígeno disuelto fue determinado por el método Winkler modificado por Carpenter (1965) usando el equipo y procedimientos descritos por Anderson (1971). En el crucero 7804-J, problemas asociados con malos funcionamientos de equipo y malos métodos de fijación resultaron en datos desconfiables. Los datos para estas estaciones han sido suprimidos.

Fosfato, silicato, nitrito, y nitrato, se determinaron con la ayuda del analizador automático con las siguientes especificaciones:

Muestreador:

A.H. Thomas Modelo 253 Little Dipper con una roseta muestreadora con 20 posiciones.

Bomba abastecedora:

Technicon^R AutoAnalyzer^R II Bomba Abastecedora con barra de aire.

Sensores: Hitachi Modelo 100-10 espectrofotómetros con adaptadores que permiten el flujo libre por las celdas.

Registradores: Hitachi Modelo 056 dos registradores que consisten de plumas con puntas de fieltro.

Los procedimientos usados son básicamente los descritos en Atlas *et al.* (1971). Los silicatos y nitratos fueron procesados con poca dificultad y de manera rutinaria. Las muestras para determinar nitritos fueron contaminados en varios de los cruceros. Los nitritos tendían a variarse, siendo entre malos y muy malos, después de las primeras semanas de cada crucero,

Phosphate data are less reliable than the other measurements due to a number of problems including: poor sensitivity, poorly defined peaks, a serious memory effect and a very slow response time. Temperature control at the elevated temperature required for the analysis were also a problem at times. The initially calculated phosphate values were often unreasonable. Adjustments were made based on two factors: one expedition phosphate data show that there is very little phosphate variation at a depth of 500 meters (approx. 2.8 to 3.1 $\mu\text{g-at/L}$) and two, a plot of phosphate vs. nitrate is essentially linear and constant, and the cruise nitrates are believed to be acceptable. The phosphate factors and baselines were adjusted to bring the phosphate results into reasonable agreement with the historical 500 m phosphate range and the phosphate-nitrate relationship.

The observed data have been evaluated using standard DCPG techniques (Klein, 1973). This involves consideration of their variation as functions of density or depth and their relations to each other, and comparison with concurrent bathythermogram (BT or XBT) or CTDO observations and with previous or adjacent observations.

In general, chlorophyll samples were collected from the first 12 levels of 18 bottle casts or all levels of shallow casts. However, during cruises 7712-J and 7801-J, samples were typically taken from only 7 of the top 12 levels.

Chlorophyll samples were analyzed on all cruises by fluorometer using one of two techniques: 7712-H, the technique of Yentsch and Menzel (1963); on all other cruises, the technique of Owen (1974). On 7801-H, both fluorometers became inoperable shortly after the cruise was started. As a result, data for about five stations have been lost. The remainder of the samples were filtered; the filters were frozen and returned to the lab for subsequent analysis. A comparison of frozen versus non-frozen samples (Owen, 1978, verbal communications) would suggest that samples from frozen filters could be low by as much as 25%.

Secchi disk observations were made on most stations occurring between 0900 and 1600 Pacific Standard Time (PST, +8) for all cruises except 7712-H. These data are tabulated following the chlorophyll data.

Tritium samples were collected on the Jordan during Cruises 7801 and 7804 at selected stations. Additional samples were taken on subsequent cruises. All tritium results may appear in a later report.

Data collected with an in situ Conductivity/Temperature/Depth/Oxygen recorder (CTDO) during the cruises in this report will appear in a separate report.

dependiendo de si la contaminación ocurrió cuando las botellas muestradoras no fueron limpiadas rutinamente con ácido hidroclórico. Cuando la contaminación era muy evidente, los valores típicamente "altos" de nitrito eran suprimidos para aquella estación y el valor tabulado de nitrato es probablemente más cercano al valor correcto que si le hubiera hecho una corrección con el valor "alto" del nitrito.

Los datos de fosfatos son menos confiables que las otras medidas debido a una serie de problemas que incluyen lo siguiente: mala sensibilidad, picos mal definidos, un serio efecto de memoria, y un lento tiempo de respuesta. El mantenimiento de la temperatura a la temperatura elevada requerida por el análisis también resultó problemático a veces. Los valores de fosfatos que se calculaban inicialmente eran a menudo irrazonables. Se hicieron ajustes, basándose en dos factores: datos de fosfato de expedición muestran que hay muy poca variación de fosfato a una profundidad de 500 metros (approx. 2.8 a 3.1 $\mu\text{g-at/L}$) y, un diagrama de fosfato contra nitrato esencialmente linear y constante, y se cree que los nitratos de los cruceros son aceptables. Los factores de fosfato y las líneas de base fueron ajustados para que estuvieran los resultados de fosfato de acuerdo con el rango fosfático histórico de 500 metros y la relación fosfato-nitrato.

Los datos observados fueron evaluados usando las técnicas estándares del Data Collection and Processing Group (DCPG) (Klein, 1973). Estas técnicas consideran sus variaciones en función de la densidad ó profundidad y las relaciones de una con otra y en comparación con batítermogramas simultáneos (BT ó XBT) ó con CTDO, así como con observaciones previas.

En general las muestras fueron colectadas de los primeros 12 niveles de un lance de 18 botellas ó de todos los niveles en los muestreos realizados a poca profundidad, excepto durante los cruceros 7712-J y 7801-J donde las muestras fueron tomadas de los 7 primeros niveles.

Las muestras de clorofila en todos los cruceros se analizaron por fluorometría utilizando una u otra de las siguientes técnicas: Para el crucero 7712-H se utilizó la técnica de Yentsch y Menzel (1963) y para todos los demás la técnica de Owen (1974), excepto el crucero 7801-H en el cual ambos fluorómetros estuvieron fuera de operación poco después de iniciado el crucero. Como resultado se perdieron datos de 5 estaciones. Las muestras restantes fueron filtradas; los filtros se congelaron y fueron enviados al laboratorio para el análisis subsecuente. Una comparación entre las muestras congeladas y las no congeladas (Owen, comunicación personal, 1978), sugeriría que las

Starting with Cruise 7712, the standard CalCOFI oblique tow, 300 meters of wire out, depth permitting, was made with an open Bongo frame with a $505\ \mu$ net on the starboard side and a $333\ \mu$ net on the port side. Starboard samples were preserved in formalin; port samples were preserved in an alcohol solution for otolith studies.

Periodically a heretofore standard 1 m CalCOFI tow was taken in order to extend the comparisons between the Bongo and 1-m net tows made during the 1975 CalCOFI cruises.

Manta (neuston) surface tows were made on all net-tow stations, weather conditions permitting, and on selected stations vertical phytoplankton tows were made to a depth of 100 m (depth permitting).

TABULATED DATA

The time for bottle casts is reported in Greenwich Mean Time. It is the time of messenger releases. Secchi disk observations are reported in local time (PST).

When more than one cast was lowered on a station, the messenger times for the first and last casts are given. Multiple casts, excluding the surface casts, are indicated by a footnote letter following the observed depth.

Bottom depths, determined acoustically, have been corrected using Mathews (1939) tables and are reported in meters. On the Humboldt, the echo sounding units had a rated maximum sounding range of 1000 meters. Depths greater than this are from the navigational charts, and after conversion to meters have been listed to the nearest five meters. The weather and dominant waves are coded using the National Oceanographic Data Center (NODC) method.

Data for all cruises presented in this report were obtained by bottle casts or from separate lowerings to obtain the Secchi disk data. The data appear in two forms:

1. Data from the sample bottle casts are tabulated with the observed levels of depth on the left of a page, and standard depth values of temperature, salinity, and oxygen interpolated from these observations on the right. Computed values of thermosteric anomaly (DT) are included with the observed levels and computed values of sigma-t (SIGT), thermosteric anomaly (DT), and geopotential anomaly (DD) are included with the interpolated levels.

muestras de filtros congelados podían resultar con una desviación del 25%.

Las observaciones con disco Secchi se efectuaron en todas las estaciones realizadas entre las 0900 y las 1600 horas tiempo del Pacífico (PST) para todos los cruceros, excepto para el 7712-H. Estos datos son tabulados por separado y siguen a los datos de clorofila.

Durante 7801-J y 7804-J se tomaron muestras de tritio en estaciones selectas. Adicionalmente se tomaron muestras en cruceros subsecuentes. Los resultados de estos datos serán reportados posteriormente en un informe por separado.

Iniciándose con el crucero 7712 se hizo un arrastre oblicuo estándar de CalCOFI, cuando ésto fuera permitido por una profundidad equivalente a un filar de 300 metros de cable. Se hizo con un marco abierto Bongo con una red de 505μ en el lado estribo y una red de 333μ en el lado babor. Las muestras del lado babor fueron preservados en una solución de alcohol para estudios de otolitos.

Periódicamente los arrastres CalCOFI de 1 metro que eran estándares hasta la fecha se hicieron para poder extender las comparaciones que se hicieron durante los cruceros CalCOFI de 1975.

También se hicieron arrastres superficiales Manta (neuston) y en estaciones selectas se hicieron arrastres verticales de fitoplancton hasta una profundidad de 100 metros (si la profundidad lo permitía).

DATOS TABULADOS

El tiempo registrado para los lances de botella fue el tiempo del meridiano de Greenwich. Es la hora del envío del mensajero. Las observaciones del disco de Secchi son registradas en tiempo local (hora del Pacífico).

Cuando se realizó más de un lance por estación se anota la hora del envío del primer mensajero y del último. Multiples lances, excluyendo a lances superficiales, se señalan con una letra al calce después de la profundidad observada.

Cuando la profundidad del fondo se determinó acústicamente, fue corregida utilizando las tablas de Mathews (1939), registrándola en metros. En el B/I Humboldt, las profundidades mayores de 1000 metros no fueron registradas por la ecosonda, así que éstas se obtuvieron de cartas de navegación y después de ser convertidas a metros, fueron listadas con aproximación a cinco metros. El tiempo y oleaje dominante se codificaron usando el método del National Oceanographic Data Center (NODC).

2. Chlorophyll, phaeophytin and Secchi disk data appear as separate sections.

With the addition of chlorophyll-a, phaeophytin and Secchi disk observations, the same parameters have been tabulated in this report as in previous reports. The decimal has been omitted from the CalCOFI station number so station 90.65 appears in the tabulated data as 90065. [The CalCOFI station designations have been in use for over twenty years. The first part specifies a line normal to the general trend of the coast line (CalCOFI line). The second part specifies a station position relative to the coast on the CalCOFI line.] The column headings are to be interpreted as follows:

Z	Depth	Meters
T	Temperature	°C
S	Salinity	‰
O2	Dissolved oxygen	ml/L
PO4	"Reactive" inorganic phosphate-phosphorous	µg-at/L
SiO3	"Reactive" inorganic silicate-silicon	µg-at/L
NO2	"Reactive" nitrate-nitrogen	µg-at/L
NO3	"Reactive" nitrate-nitrogen	µg-at/L
DT	δ_T = Thermosteric anomaly	cl/ton
SIGT	$\sigma_T = (\rho_{s,t,0} - 1)10^3$ where $\rho_{s,t,0}$ is is the density the parcel would have if moved isothermally to the sea surface.	g/L
DD	Geopotential anomaly, referred to the sea surface.	dyn. meters
CHL.A	Chlorophyll-a	mg/m³
PHAEAO	Phaeophytin	mg/m³

Durante el crucero 7801-H, la parte que registra velocidad en el anemómetro del barco se descompuso después de la estación 103.45. Por ésto, se empezó con la estación 103.40, y se estimó la velocidad del viento basada en el oleaje causado por el viento. Estos datos deben ser considerados menos fiables que lo normal.

Los datos de todos los cruceros presentados en este informe se obtuvieron de lances con botellas ó de bajadas separadas para obtener los datos del disco Secchi. Estos datos se registran en dos formas:

1. Los datos provenientes de lances con botellas y tabulados en niveles de profundidad se ubicaron al margen izquierdo de la página y los valores de profundidades estándares correspondientes a temperatura, salinidad, oxígeno, interpolados de estas observaciones, al lado derecho. Valores computados de la anomalía termostérica (DT) se incluyen con los niveles observados, y los valores computados de sigma-t (SIGT), anomalía termostérica (DT), y anomalía geopotencial (DD) se incluyen con los niveles interpolados.
2. Clorofila, feofitina, y datos del disco Secchi aparecen en una sección separada.

Con la adición de clorofila-a, feofitina, y observaciones del disco Secchi, los mismos parámetros son tabulados en este informe como en reportes previos. El punto decimal de las estaciones de CalCOFI se omitió, así que los datos de la estación número 90.65 se registran como 90065. [Las designaciones de estaciones CalCOFI han estado en uso durante más de veinte años. La primera parte especifica una línea normal a la tendencia general de la costa (Línea CalCOFI). La segunda parte especifica la posición de una estación relativo a la costa en la línea CalCOFI.] Los símbolos del encabezado de las columnas se deben interpretar de la siguiente manera:

Z	Profundidad	Metros
T	Temperatura	°C
S	Salinidad	‰
O2	Oxígeno	ml/L
PO4	Fosfato-fósforo inorgánico "reactivo"	µg-at/L
SiO3	Silicato-Silicio inorgánico "reactivo"	µg-at/L
NO2	Nitrito-nitrógeno "reactivo"	µg-at/L
NO3	Nitrito-nitrógeno "reactivo"	µg-at/L
DT	δ_T = Anomalía termostérica	cl/ton.
SIGT	$\sigma_T = (\rho_{s,t,0} - 1)10^3$ donde $\rho_{s,t,0}$ es la densidad que tendría la parcela si ésta se moviera isotérmicamente hasta la superficie del mar.	g/L
DD	Anomalía geopotencial, referida a la superficie del mar.	metros din.
CHL.A	Clorofila-a	mg/m³
PHAEAO	Feofitina	mg/m³

FOOTNOTES

Data which appear to be in error without obvious reason are reported, but flagged uncertain with a U. Such data were not used in the determination of data at standard depths. Footnotes are used to indicate data which have required special processing.

NOTAS AL CALCE

Los datos que aparecen con errores sin explicación obvia son reportados, pero se les señala con una U. Estos datos no fueron utilizados en la determinación de datos a profundidades estándares. Se utilizan las notas al calce para indicar los datos que han requerido un procesamiento especial.

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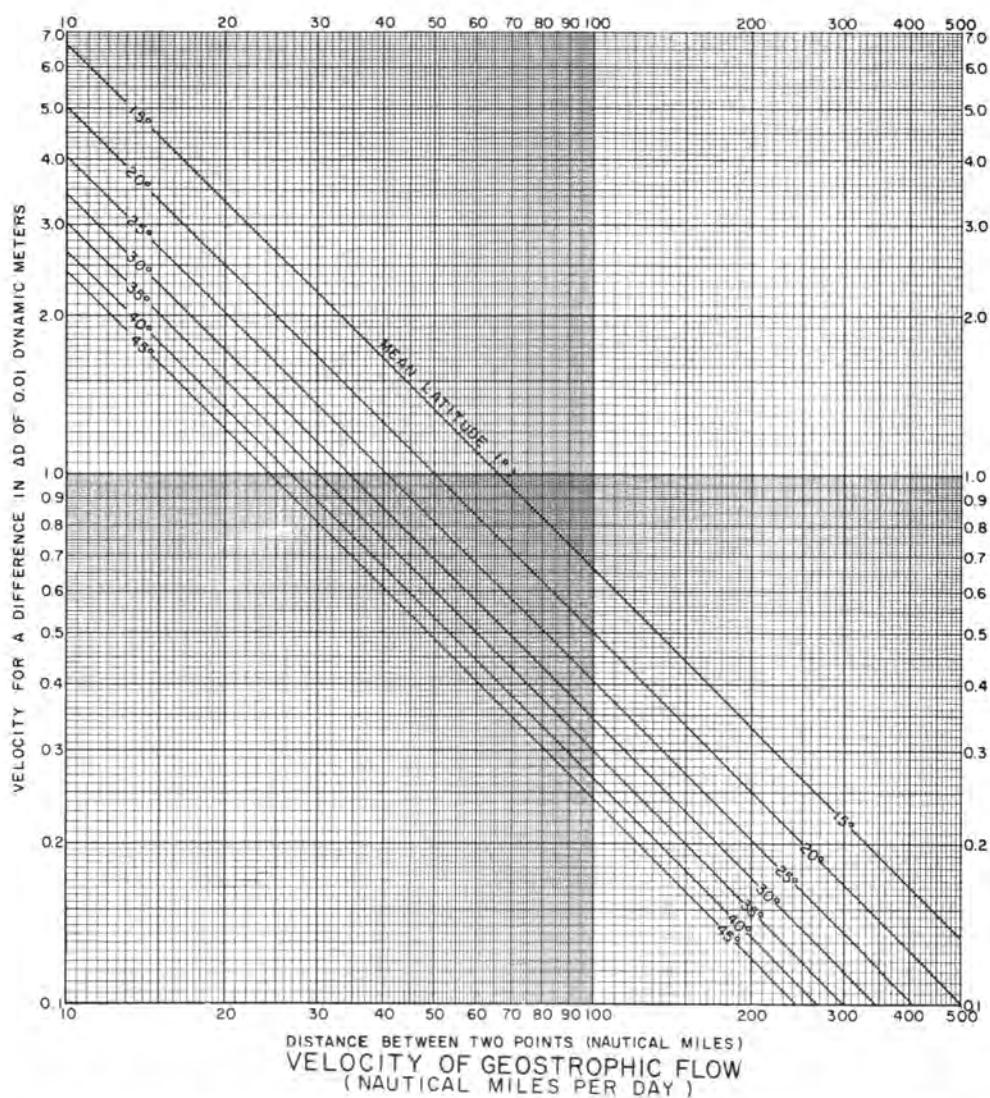
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cm/sec	0	1	2	3	4	5	6	7	8	9
0	KNOTS NM/DAY	0.02 0.47	0.04 0.93	0.06 1.40	0.08 1.86	0.10 2.33	0.12 2.80	0.14 3.26	0.16 3.73	0.17 4.20
10	0.19 4.66	0.21 5.13	0.23 5.59	0.25 6.06	0.27 6.53	0.29 6.99	0.31 7.46	0.33 7.93	0.35 8.39	0.37 8.86
20	0.39 9.32	0.41 9.79	0.43 10.26	0.45 10.72	0.47 11.19	0.49 11.66	0.51 12.12	0.52 12.59	0.54 13.05	0.56 13.52
30	0.58 13.99	0.60 14.45	0.62 14.92	0.64 15.38	0.66 15.85	0.68 16.32	0.70 16.78	0.72 17.25	0.74 17.72	0.76 18.18
40	0.78 18.65	0.80 19.11	0.82 19.58	0.84 20.05	0.85 20.51	0.87 20.98	0.89 21.45	0.91 21.91	0.93 22.38	0.95 22.84
50	0.97 23.31	0.99 23.78	1.01 24.24	1.03 24.71	1.05 25.17	1.07 25.64	1.09 26.11	1.11 26.57	1.13 27.04	1.15 27.51
60	1.17 27.98	1.18 28.44	1.20 28.90	1.22 29.37	1.24 29.84	1.26 30.30	1.28 30.77	1.30 31.24	1.32 31.70	1.34 32.17
70	1.36 32.63	1.38 33.10	1.40 33.57	1.42 34.03	1.44 34.50	1.46 34.96	1.48 35.43	1.50 35.90	1.52 36.36	1.53 36.83
80	1.55 37.30	1.57 37.76	1.59 38.23	1.61 38.69	1.63 39.16	1.65 39.63	1.67 40.09	1.69 40.56	1.71 41.03	1.73 41.49
90	1.75 41.96	1.77 42.42	1.79 42.89	1.81 43.36	1.83 43.82	1.85 44.29	1.86 44.76	1.88 45.22	1.90 45.69	1.92 46.15
100	1.94 46.62	1.96 47.09	1.98 47.55	2.00 48.02	2.02 48.48	2.04 48.95	2.06 49.42	2.08 49.88	2.10 50.35	2.12 50.82

CONVERSION TABLE
(CENTIMETERS / SECOND - KNOTS - NAUTICAL MILES / DAY)

1 cm/sec = 0.019 kts = 0.466 NAUTICAL MILES / DAY

1 kts = 24 NAUTICAL MILES / DAY = 51.48 cm/sec

1 NAUTICAL MILE / DAY = 0.042 kts = 2.14 cm/sec

FIGURES

Cruise 7804

1. CalCOFI Cruise 7804, station positions
2. Horizontal distribution of dynamic height anomaly (0 over 500 d-bar)
3. Horizontal distribution of dynamic height anomaly (200 over 500 d-bar)
4. Horizontal distribution of temperature at 10 meters
5. Horizontal distribution of salinity at 10 meters
6. Horizontal distribution of thermosteric anomaly at 10 meters
7. Horizontal distribution of temperature at 200 meters
8. Horizontal distribution of salinity at 200 meters
9. Horizontal distribution of thermosteric anomaly at 200 meters

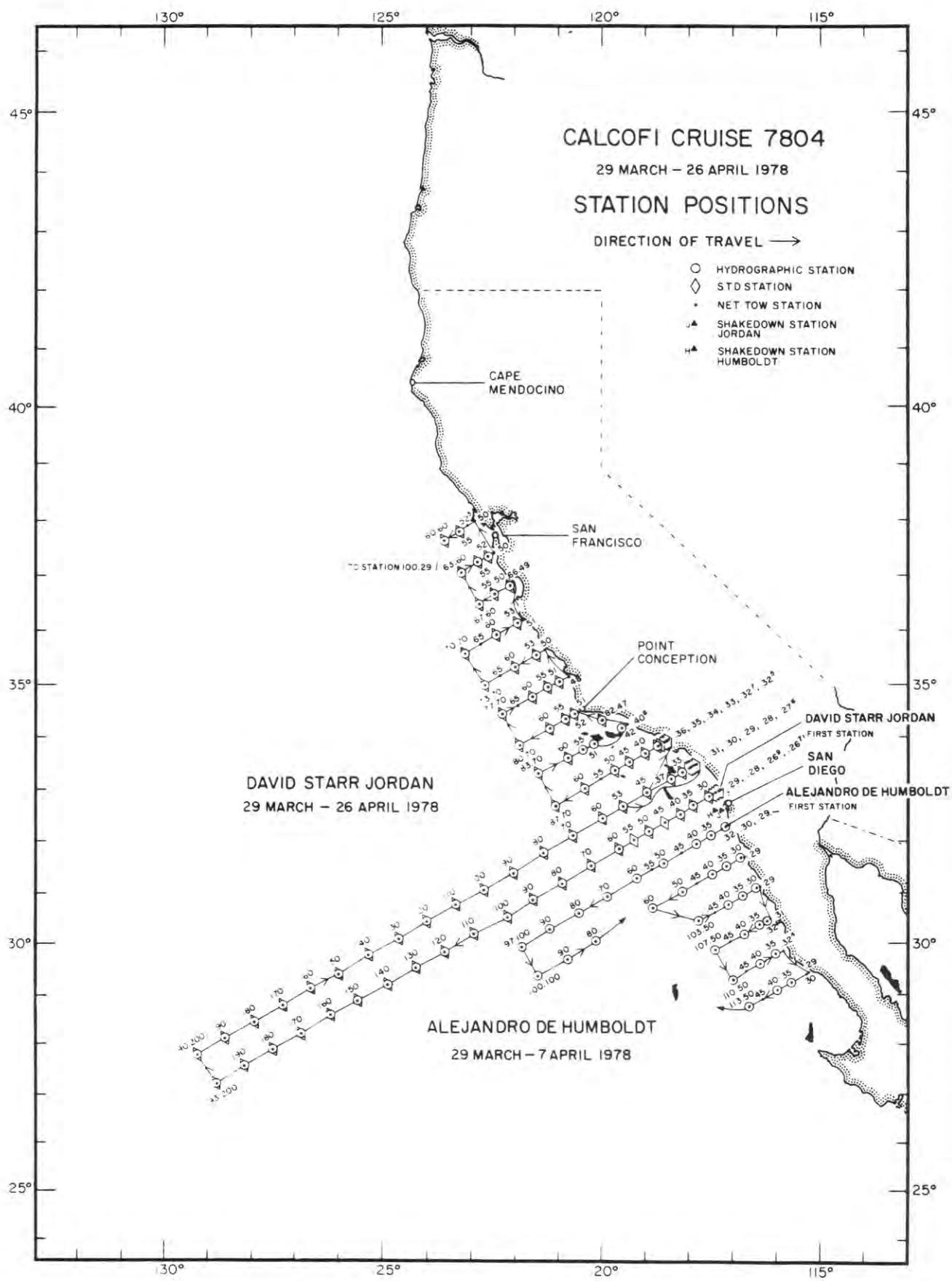


FIGURE 1

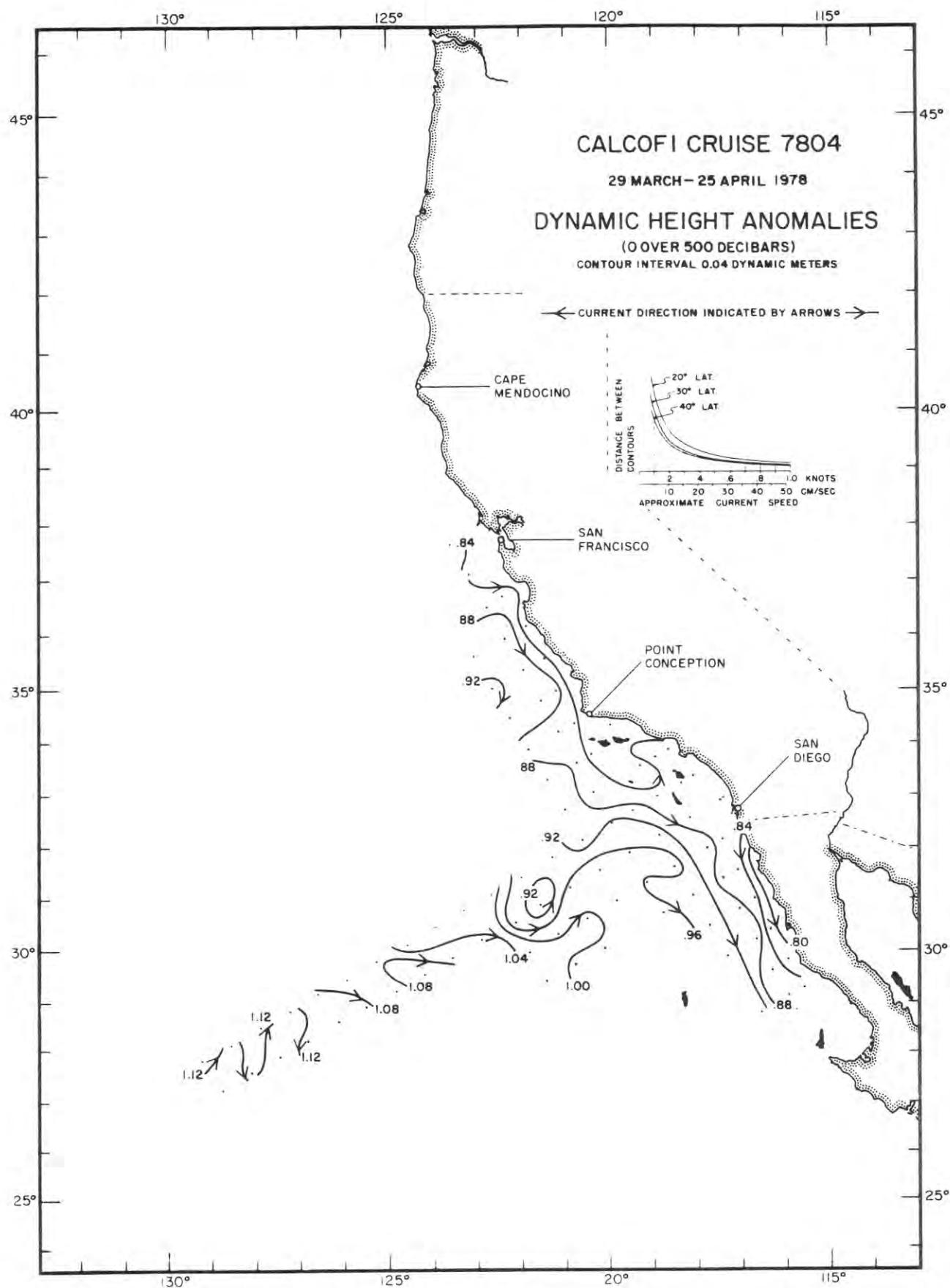


FIGURE 2

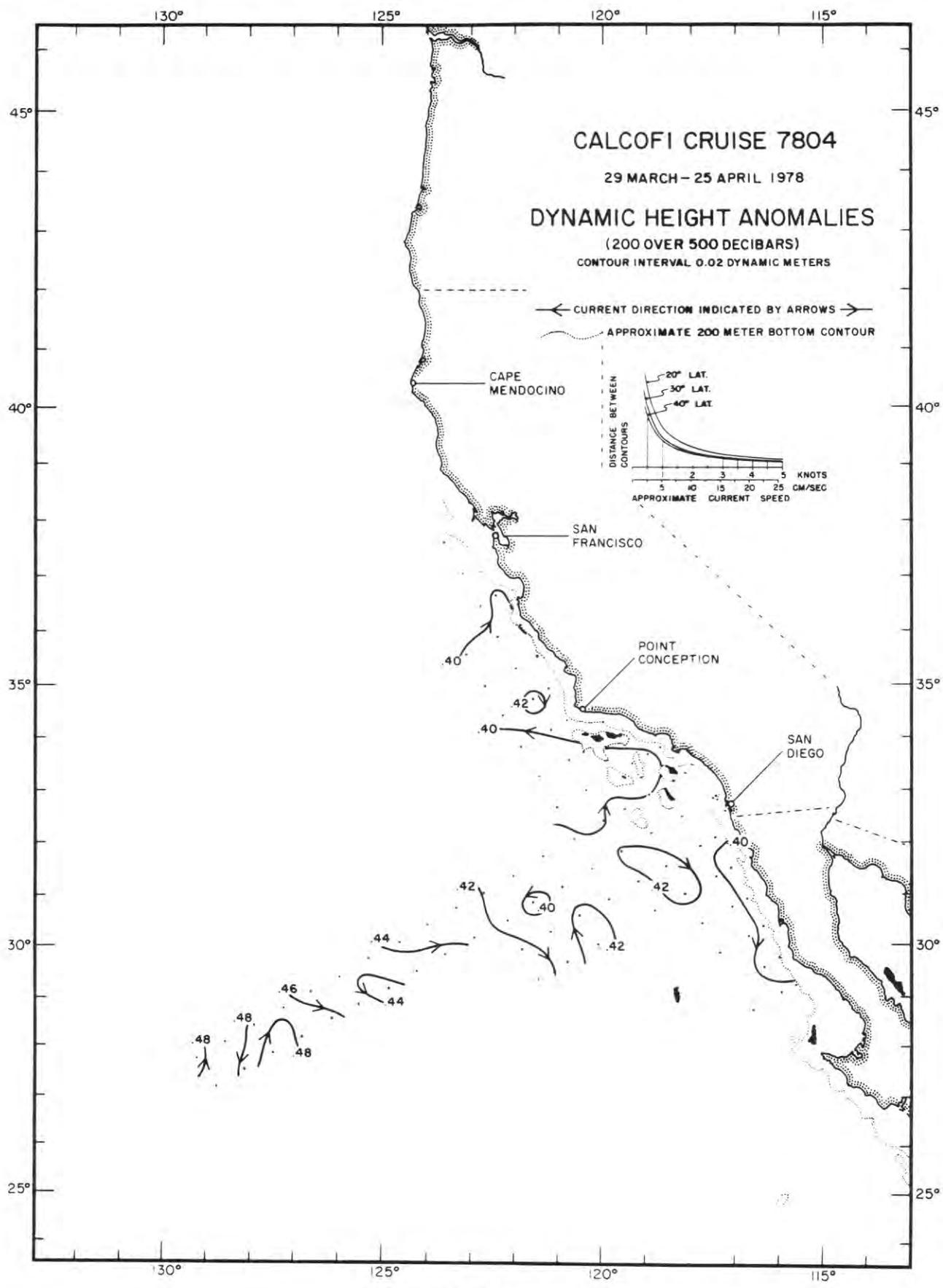


FIGURE 3

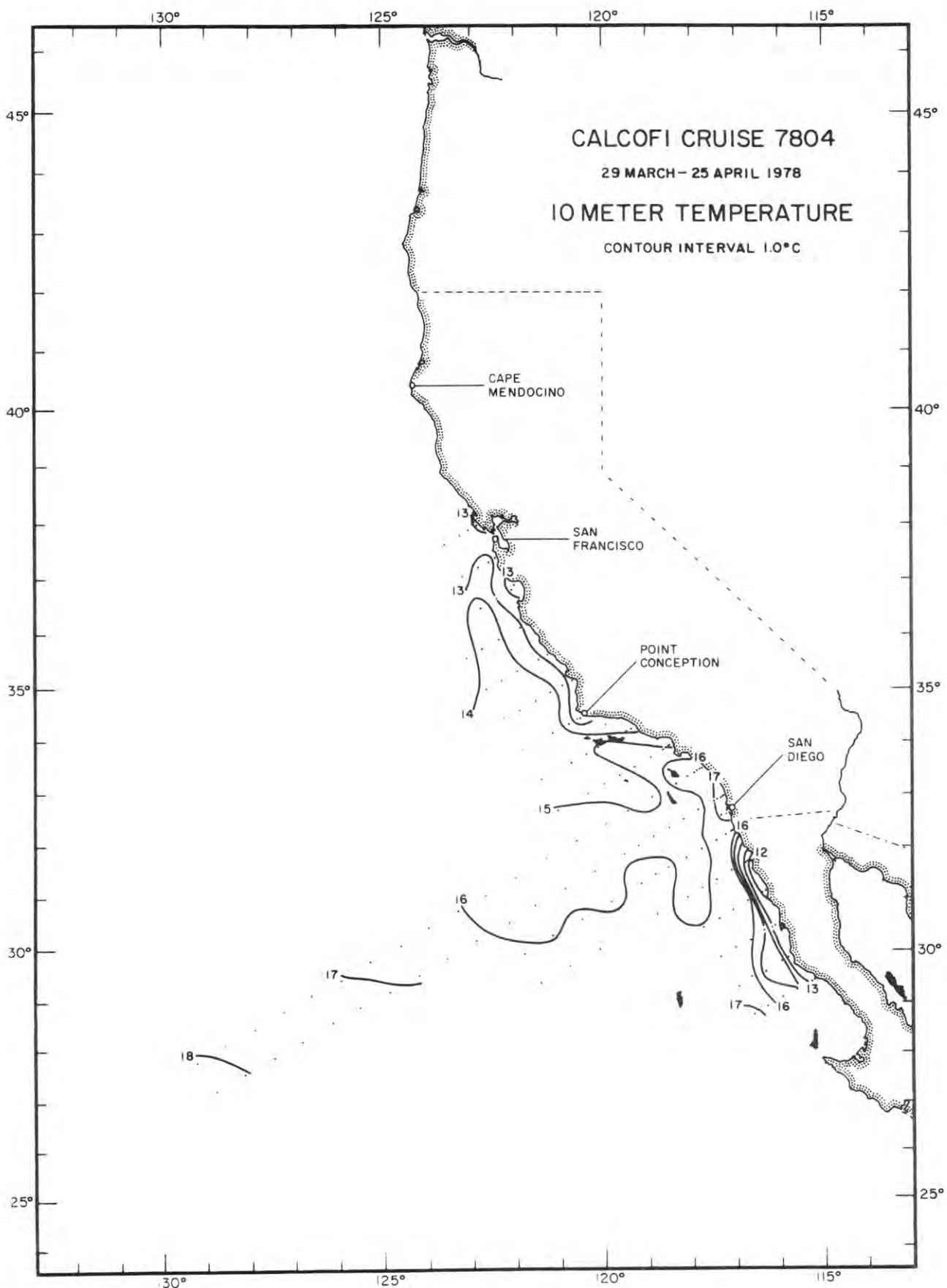


FIGURE 4

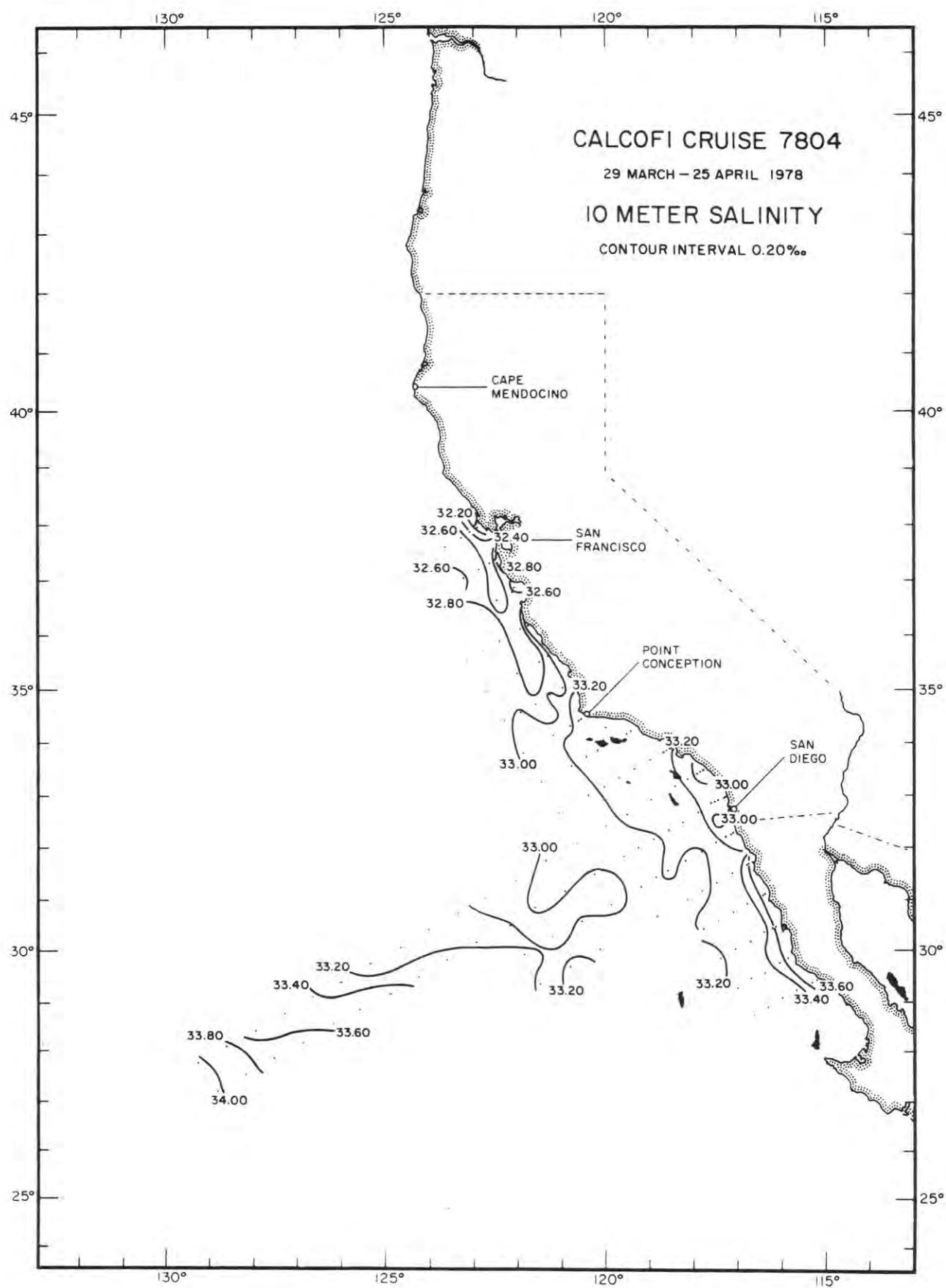


FIGURE 5

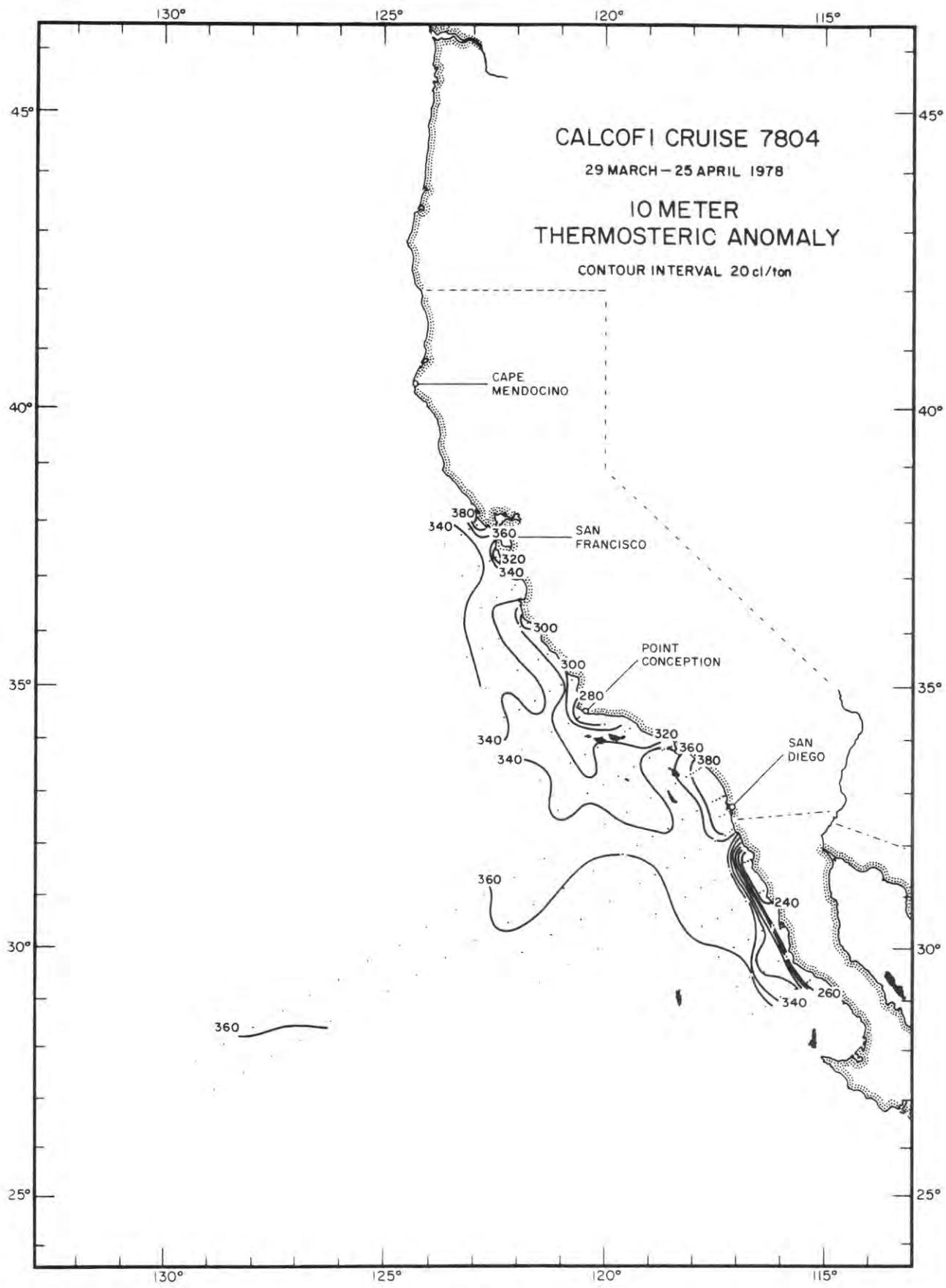


FIGURE 6

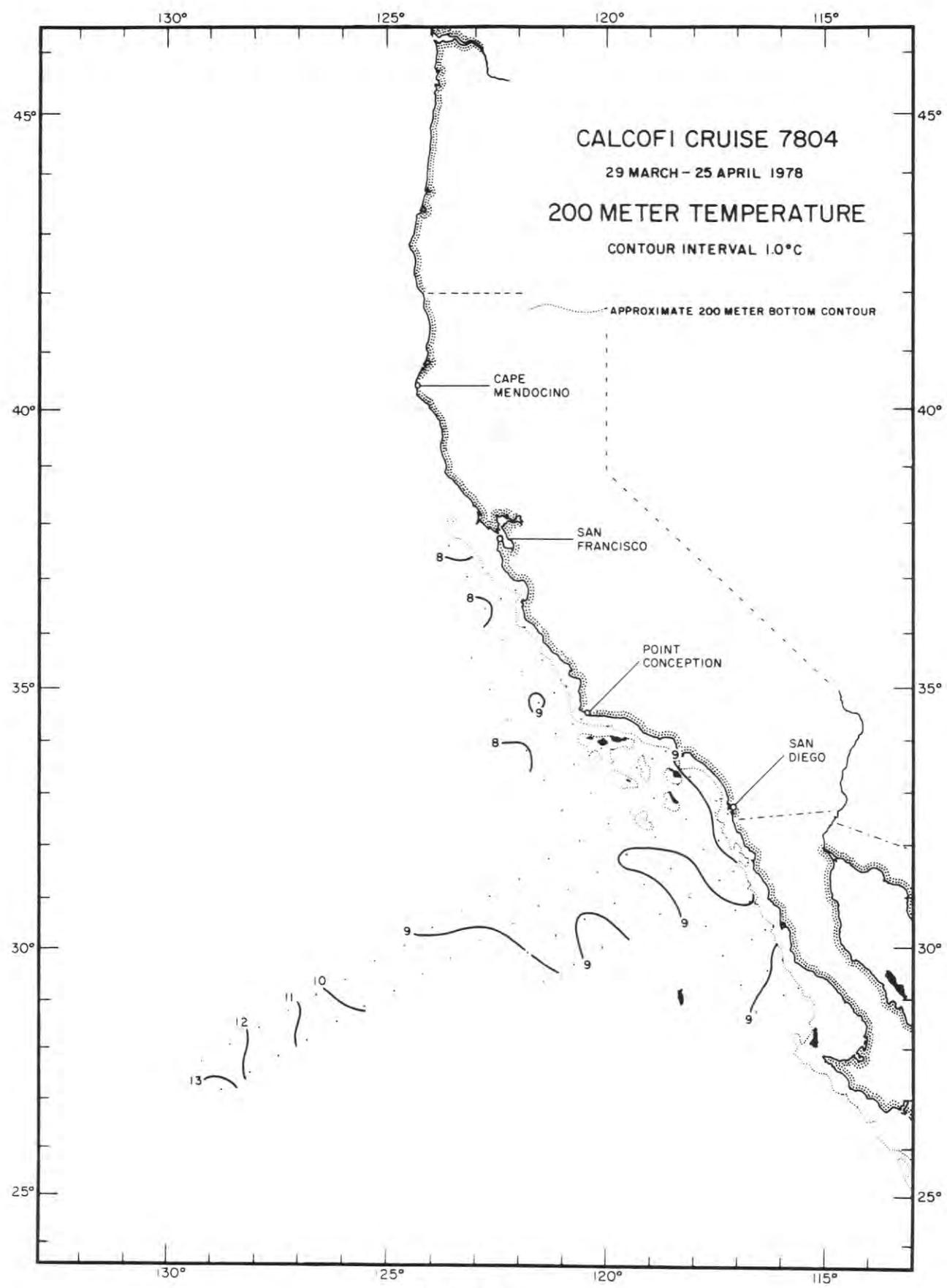


FIGURE 7

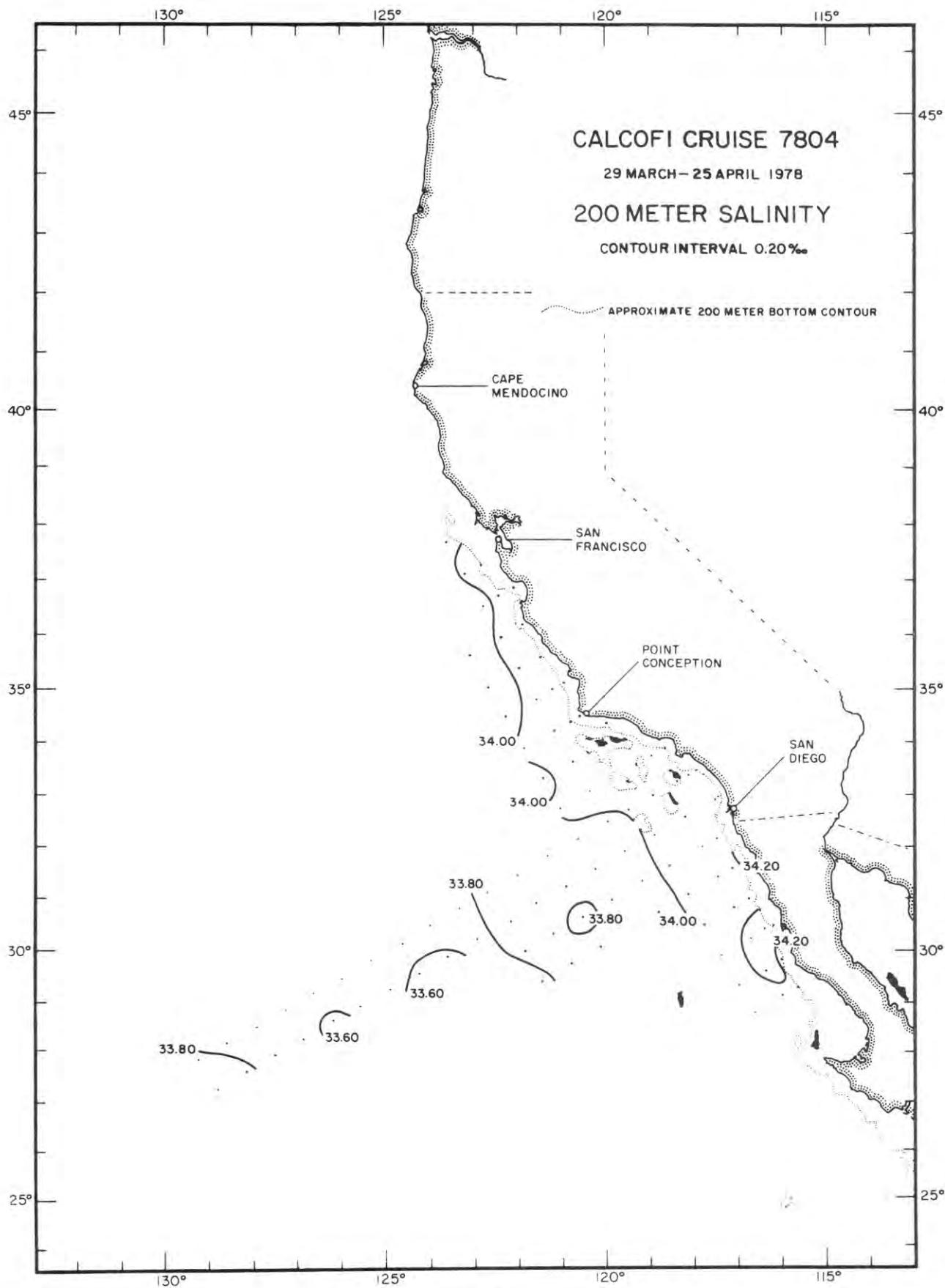


FIGURE 8

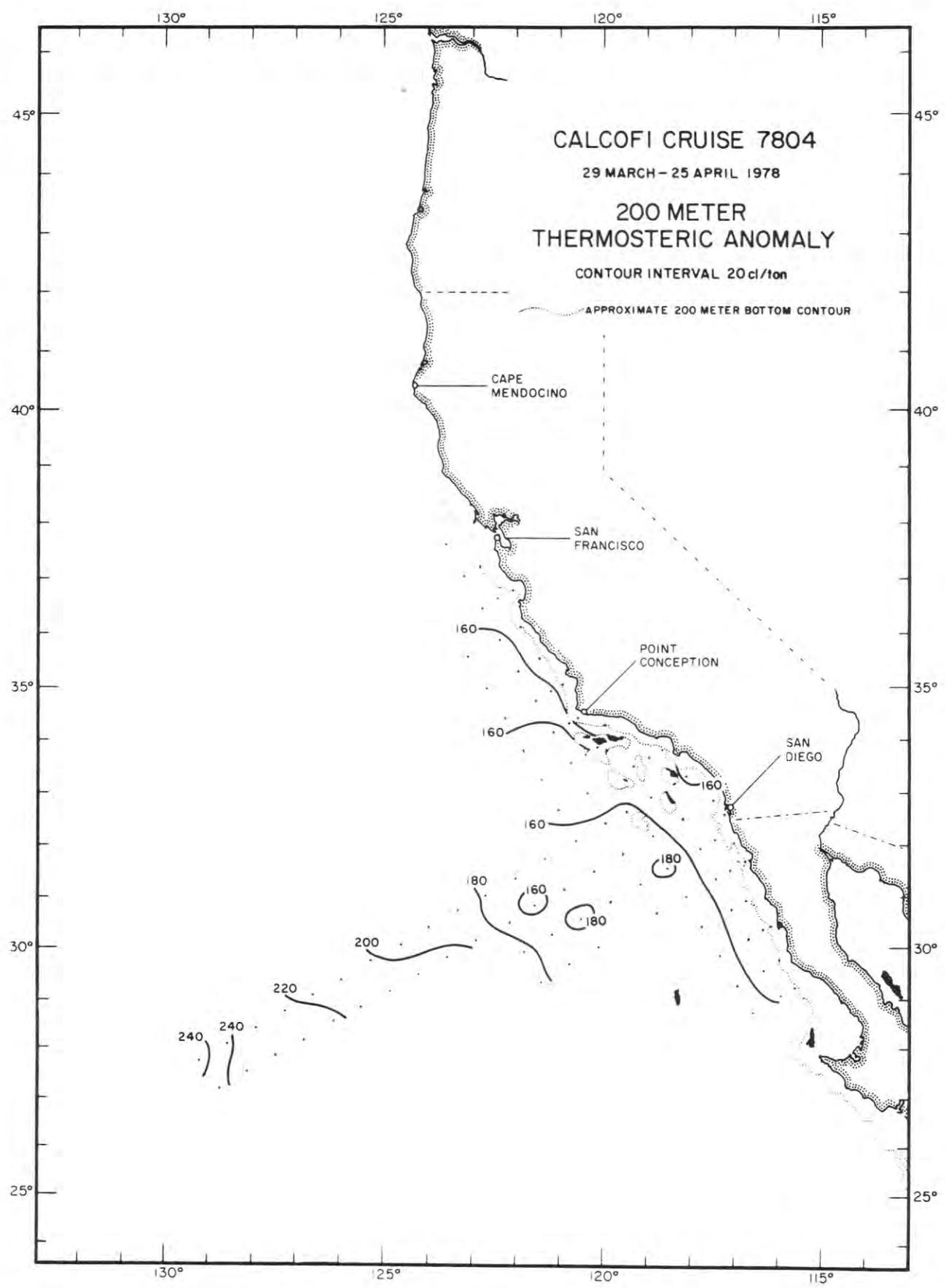


FIGURE 9

PERSONNEL

Cruise 7804

SHIP'S CAPTAINS

Roll, Milton RV David Starr Jordan
Zatarain, José M. RV Alejandro de Humboldt

PERSONNEL PARTICIPATING IN THE COLLECTION OF DATA

RV David Starr Jordan:

Counts, Robert C. (in charge)	Fishery Biologist NMFS
Bryan, Walter R.	Marine Technician DCPG*
Conway, Carol	Engineering Aide DCPG
Cota V., Alfredo	Fishery Biologist INP
Dotson, Ronald C.	Biological Technician NMFS
Fastenau, Henry C.	Marine Technician DCPG
Flerx, William C.	Biological Technician NMFS
Johnson, Frank W.	Marine Technician DCPG
Lehmann, Virginia D.	Staff Research Associate DCPG
Mead, Richard V.	Marine Technician DCPG
Rowe, Raymond A.	Marine Technician DCPG
Sanchez, Carol A.	Biological Technician NMFS
Smith, Paul E.	Fishery Biologist NMFS

RV Alejandro de Humboldt:

Alvarez Mendoza, Manuel (in charge)	Oceanologist INP
Anderson, George C.	Staff Research Associate DCPG
Cid, Alejandro	INP
Costello, James P.	Marine Technician DCPG
Fastenau, Henry C.	Marine Technician DCPG
Flerx, William C.	Biological Technician NMFS
Gonzalez, Miguel Angel	INP
Mauck, William W.	Marine Technician DCPG
Mead, Richard V.	Marine Technician DCPG
Montezuma, Manuel	INP
Patrick, Ronald G.	Marine Technician DCPG

*DCPG: Now Physical & Chemical Oceanographic Data Facility (PACODF)

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

60055

LATITUDE 37 47.0N	LONGITUDE 123 15.0W	MO/DAY/YR 4/19/78	MESSENDER 1852	TIME GMT	BOTTOM 134M	WIND 180	SPEED 14KT	WEATHER 1	DOMINANT WAVES 230 5 5						
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
0	12.94	32.536	6.42	0.42	4.	0.04	0.2	342.4	0	12.94	32.536	6.42	24.521	342.4	0.000
10	12.35	32.679	6.34	0.46	5.	0.06	1.1	321.1	10	12.35	32.679	6.34	24.745	321.1	0.033
24	11.42	32.950	5.44	0.79	10.	0.26	7.2	284.6	20	11.70	32.875	5.73	25.016	295.3	0.064
33	10.70	33.084	4.97	1.04	13.	0.37	11.4	262.5	30	10.93	33.043	5.11	25.286	269.6	0.092
43	10.24	33.237	4.71	1.26	16.	0.22	14.8	245.7	50	10.11	33.333	4.43	25.654	234.6	0.143
57	10.04	33.414	4.14	1.43	21.	0.21	17.5	227.4	75	9.75	33.580	3.63	25.907	210.5	0.199
71	9.83	33.551	3.70	1.60	24.	0.17	20.2	213.9	100	9.31	33.740	3.22	26.104	191.8	0.250
95	9.37	33.704	3.32	1.75	28.	0.18	22.9	195.3							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

60060

LATITUDE 37 37.0N	LONGITUDE 123 37.0W	MO/DAY/YR 4/19/78	MESSENDER 2236	TIME GMT	BOTTOM 3164M	WIND 210	SPEED 15KT	WEATHER 2	DOMINANT WAVES 200 3 5						
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
2	13.29	32.731	6.36	0.39	4.	0.01	0.0	334.7	0	13.29	32.731	6.36	24.602	334.7	0.000
11	12.77	32.723	6.50	0.40	4.	0.01	0.0	325.5	10	12.81	32.726	6.49	24.691	326.2	0.033
30	12.55	32.725	6.44	0.40	4.	0.01	0.0	321.3	20	12.64	32.724	6.47	24.724	323.1	0.066
40	12.12	32.720	6.48	0.51	6.	0.04	1.3	313.9	30	12.55	32.725	6.44	24.743	321.3	0.098
49	11.50	32.817 A	6.02	0.56	6.	0.18	2.7	295.8	50	11.42	32.831	5.99	25.033	293.7	0.160
63	10.48	32.968	5.65	0.85	10.	0.11	8.0	267.5	75	9.82	33.063	5.41	25.491	250.1	0.228
77	9.74	33.076	5.37	1.08	14.	0.07	12.0	247.6	100	9.40	33.361	4.49	25.792	221.4	0.287
96	9.47	33.313	4.63	1.43	19.	0.06	17.3	225.9	125	9.17	33.606	3.67	26.021	199.7	0.340
119	9.16	33.552	3.87	1.76	26.	0.08	21.4	203.4	150	8.84	33.741	3.16	26.178	184.6	0.389
138	9.19	33.704	3.27	1.94	31.	0.06	24.1	192.6	200	7.85	33.932	2.70	26.478	156.3	0.476
166	8.29	33.772	4.00U	1.88	31.	0.06	23.0	174.2	250	7.27	33.997	2.24	26.612	143.5	0.553
193	7.87	33.903	5.69U	2.02	35.	0.03	26.1	158.6	300	6.76	34.056	1.78	26.729	132.4	0.624
221	7.80	33.989	2.98U	2.42	41.	0.09		151.2	400	5.92	34.107	1.07	26.879	118.2	0.754
258	7.11	33.994	2.82U	2.54	48.	0.03	31.6	141.5	500	5.41	34.169	0.71	26.990	107.7	0.872
314	6.68	34.076	1.65	2.85	60.	0.02	36.7	129.8							
384	5.98	34.094	1.15	3.03	71.	0.01	39.7	119.8							
454	5.74	34.148	0.85	3.06	77.	0.08	40.8	112.9							
531	5.12	34.176	0.65	3.06	88.	0.00	42.5	103.8							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

63052

LATITUDE 37 19.0N	LONGITUDE 122 36.0W	MO/DAY/YR 4/19/78	MESSENDER 0930	TIME GMT	BOTTOM 86M	WIND 110	SPEED 5KT	WEATHER	DOMINANT WAVES						
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
0	13.68	32.418	6.28	0.45	4.	0.03	0.1	365.2	0	13.68	32.418	6.28	24.283	365.2	0.000
10	13.34	32.477	6.33	0.48	3.	0.02	0.1	354.3	10	13.34	32.477	6.33	24.397	354.3	0.036
19	12.97	32.545	6.36	0.44	3.	0.02	0.0	342.3	20	12.92	32.552	6.35	24.535	341.1	0.071
29	12.36	32.638	6.25	0.54	4.	0.04	1.3	324.3	30	12.27	32.678	6.16	24.757	319.9	0.104
47	10.79	33.366	4.32	1.32	17.	0.24	15.2	243.2	50	10.59	33.377	4.12	25.606	239.2	0.160
70	9.84	33.576	3.46	1.65	28.	0.13	18.8	212.2	75	9.84	33.580	3.44	25.892	211.9	0.217

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

63055

LATITUDE 37 13.0N	LONGITUDE 122 50.0W	MO/DAY/YR 4/19/78	MESSENDER 0641	TIME GMT	BOTTOM 297M	WIND 280	SPEED 12KT	WEATHER	DOMINANT WAVES						
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
1	13.03		6.26	0.39	4.	0.00	0.1		0	13.03	32.625	6.26	24.572	337.6	0.000
10	15.03	32.625	6.32	0.38	4.	0.01	0.1	357.6	10	13.03	32.625	6.32	24.572	337.6	0.034
29	11.46	32.887	5.72	0.70	8.	0.11	5.3	290.0	20	12.31	32.738	6.09	24.797	316.2	0.066
43	10.59	33.130	5.07	1.02	14.	0.09	11.6	257.3	30	11.38	32.903	5.69	25.096	287.7	0.097
52	10.32	33.399	4.36	1.22	17.	0.17	13.9	233.0	50	10.38	33.342	4.52	25.615	238.3	0.150
66	9.66	33.630	3.58	1.59	26.	0.08	20.8	205.3	75	9.40	33.705	3.39	26.061	195.9	0.204
80	9.29	33.731	3.34	1.75	27.	0.07	23.1	192.1	100	8.95	33.855	3.07	26.250	177.9	0.251
99	8.96	33.850	3.08	1.92	30.	0.06	25.1	178.3	125	8.84	33.911	2.86	26.312	172.0	0.295
123	8.85	33.905	2.88	1.91	32.	0.03	25.2	172.6	150	8.62	33.959	2.74	26.383	165.3	0.338
142	8.70	33.948	2.75	1.99	33.	0.04	26.8	167.1	200	8.16	34.045	2.35	26.521	152.2	0.419
175	8.37	33.986	2.70	1.99	37.	0.05	26.8	159.5	250	7.48	34.100	1.81	26.665	138.5	0.494
203	8.13	34.050	2.30	2.19	41.	0.06	29.8	151.3							
241	7.57	34.087	1.91	2.35	48.	0.03	32.7	140.7							

AN ERROR OF 0.01 IN CONDUCTIVITY RATIO, 0.39 PPT, HAS BEEN ASSUMED FOR THIS VALUE.

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

63060

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT	WAVES					
37 03.0N	123 12.0W	4/19/78	0135	GMT	2316M	290	10KT	1	320	3 7					
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	13.34	32.587	6.39	0.27	4.	0.02	0.2	346.2	0	13.34	32.587	6.39	24.481	346.2	0.000
10	12.67	32.593	6.47	0.27	4.	0.00	0.2	333.2	10	12.67	32.593	6.47	24.618	333.2	0.034
30	11.94	32.762	6.50	0.40	5.	0.09	2.2	307.6	20	12.25	32.651	6.39	24.741	321.5	0.067
39	11.57	32.925	5.70	0.57	9.	0.29	6.8	289.1	30	11.94	32.762	6.30	24.887	307.6	0.098
50	10.91	33.106	5.07	1.22	14.	0.35	12.0	264.4	50	10.91	33.106	5.07	25.340	264.4	0.156
63	10.09	33.302	4.47	1.25	19.	0.09	18.2	236.5	75	9.72	33.474	4.07	25.829	218.0	0.216
78	9.66	33.509	3.99	1.62	23.	0.08	21.1	214.3	100	9.25	33.677	3.47	26.063	195.7	0.268
96	9.32	33.653	3.52	1.65	26.	0.03	25.0	198.4	125	9.08	33.857	2.99	26.232	179.7	0.316
120	9.05	33.801	3.17	1.98	29.	0.04	27.8	183.3	150	8.97	33.995	2.56	26.366	166.9	0.360
137	9.14	33.975	2.57	2.05	33.	0.03	29.6	171.7	200	8.09	34.048	2.41	26.533	151.0	0.441
165	8.67	33.999	2.54	2.16	36.	0.03	30.6	162.9	250	7.43	34.060	2.15	26.640	140.9	0.516
193	8.19	34.039	2.45	2.25	40.	0.02	32.2	153.0	300	6.92	34.085	1.67	26.730	132.3	0.586
219	7.85	34.060	2.30	2.31	44.	0.02	33.3	146.6	400	6.25	34.146	0.92	26.868	119.3	0.717
256	7.35	34.058	2.12	2.61	49.	0.07	34.6	139.9	500	5.73	34.204	0.60	26.979	108.7	0.837
310	6.84	34.091	1.56	2.67	58.	0.00	38.4	130.7							
379	6.37	34.131	1.03	2.84	67.	0.00	41.2	121.8							
452	5.98	34.179	0.72	2.99	74.		42.4	113.5							
528	5.58	34.214	0.57	3.15	82.	0.00	44.3	106.1							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

67050

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT	WAVES					
36 48.0N	122 05.0W	4/18/78	1108	GMT	334M	360	13KT	1	320	3 7					
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
0	13.60	32.644	6.32	0.48	2.	0.03	0.2	347.0	0	13.60	32.644	6.32	24.473	347.0	0.000
10	13.61	32.650	6.31	0.43	2.	0.01	0.1	346.8	10	13.61	32.650	6.31	24.475	346.8	0.035
28	12.66	32.790	6.07	0.58	5.	0.11	2.0	318.6	20	13.19	32.703	6.18	24.598	335.1	0.069
42	11.55	33.092	5.29	0.95	12.	0.35	8.8	276.4	30	12.51	32.833	5.97	24.831	312.9	0.101
56	10.45	33.308	4.58	1.31	17.	0.15	14.8	241.9	50	10.91	33.224	4.87	25.429	255.9	0.158
70	9.47	33.506	4.04	1.62	23.	0.10	19.3	211.6	75	9.32	33.544	3.94	25.948	206.6	0.216
84	9.19	33.585	3.83	1.66	25.	0.06	21.3	201.4	100	9.04	33.670	3.68	26.092	193.0	0.267
102	9.03	33.678	3.66	1.77	27.	0.04	22.9	192.1	125	9.03	33.794	3.12	26.191	183.5	0.314
125	9.03	33.794	3.12	1.89	31.	0.13	24.3	183.5	150	8.90	33.841	2.97	26.248	178.1	0.360
152	8.88	33.843	2.96	2.04	33.	0.14	25.8	177.6	200	8.28	34.027	2.29	26.488	155.3	0.445
184	8.49	33.977	2.50	2.18	38.	0.16	28.1	161.9	250	7.53	34.098	1.78	26.656	139.4	0.521
214	8.09	34.058	2.13	2.37	44.	0.08	30.7	150.1							
246	7.57	34.094	1.81	2.48	51.	0.07	32.7	140.2							
276	7.35	34.110	1.66	2.56	55.	0.09	33.6	136.0							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

67055

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT	WAVES					
36 39.0N	122 26.0W	4/18/78	1444	GMT	2130M	340	13KT	1	320	4 5					
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	12.96	32.542	6.28	0.42	3.	0.2	342.4	0	12.96	32.542	6.28	24.522	342.4	0.000	
11	12.97	32.542	6.30	0.43	3.	0.1		10	12.97	32.543	6.30	24.521	342.5	0.034	
30	12.72	32.543	6.33	0.43	3.	0.1	337.9	20	12.85	32.543	6.31	24.54	340.2	0.068	
39	12.23	32.694	6.49	0.47	5.	0.1	317.8	30	12.72	32.543	6.33	24.569	337.9	0.102	
49	12.76	33.025	5.83	0.61	7.	2.6	303.1	50	12.68	33.042	5.77	24.960	300.6	0.166	
63	11.20	33.147	5.05	1.01	12.	8.4	266.3	75	10.47	33.270	4.66	25.543	245.1	0.235	
78	10.35	33.300	4.58	1.50	16.	14.2	240.8	100	9.87	33.561	3.89	25.871	213.9	0.293	
96	10.01	33.551	3.90	1.59	21.	19.0	218.2	125	9.08	33.682	3.77	26.094	192.7	0.344	
120	9.19	33.658	3.83	1.73	25.	21.4	196.0	150	8.90	33.838	3.18	26.246	178.3	0.391	
138	8.90	33.743	3.54	1.85	28.	23.4	185.3	200	8.45	34.023	2.38	26.459	158.0	0.477	
166	8.89	33.947	2.71	2.11	34.	26.5	170.0	250	7.86	34.092	1.92	26.604	144.3	0.554	
193	8.54	34.007	2.44	2.20	37.	27.9	160.4	300	7.05	34.075	1.86	26.704	134.8	0.626	
221	8.20	34.060	2.19	2.30	42.	30.0	151.5	400	6.24	34.126	1.08	26.853	120.7	0.759	
259	7.74	34.096	1.85	2.48	47.	32.0	142.4	500	5.79	34.235	0.58	26.996	107.1	0.879	
314	6.83	34.064	1.87	2.61	55.	34.3	132.6								
384	6.30	34.102	1.22	2.80	66.	37.6	123.1								
454	6.07	34.204	0.68	3.01	75.	39.3	112.7								
530	5.55	34.239	0.51	3.16	85.	41.0	103.9								

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

67060

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
36 28.0N	122 47.0W	4/18/78	1837	GMT	2974M	360	11KT	1	330 5 5						
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
0	14.22	32.807	6.13	0.32	4.	0.05	0.1	347.2	0	14.22	32.807	6.13	24.471	347.2	0.000
10	14.09	32.836	6.00	0.36	4.	0.02	0.1	342.5	10	14.09	32.836	6.00	24.520	342.5	0.034
28	13.99	32.856	6.10	0.32	4.	0.01	0.1	339.0	20	14.05	32.853	6.06	24.540	340.6	0.069
37	13.80	32.864	6.28	0.33	4.	0.00	0.1	334.7	30	13.97	32.858	6.16	24.561	338.6	0.103
47	13.20	32.929	5.76	0.35	5.	0.00	0.1	318.4	50	13.05	32.955	5.77	24.820	314.0	0.168
61	12.36	33.038	5.88	0.53	6.	0.16	2.9	294.8	75	10.72	33.150	5.35	25.400	258.0	0.240
75	10.72	33.150	5.35	0.91	11.	0.05	9.6	258.0	100	9.25	33.315	4.84	25.781	222.5	0.301
94	9.44	33.263	4.97	1.24	17.	0.04	14.9	229.1	125	8.73	33.571	4.19	26.062	195.8	0.353
117	8.92	33.475	4.44	1.46	22.	0.06	18.9	205.5	150	8.36	33.790	3.55	26.290	174.1	0.400
136	8.51	33.692	3.86	1.68	28.	0.06	22.5	183.4	200	7.96	33.970	2.99	26.492	154.9	0.484
164	8.27	33.852	3.33	1.95	34.	0.06	25.9	168.0	250	7.34	34.027	2.60	26.627	142.1	0.560
192	8.01	33.945	3.11	2.07	38.	0.02	27.9	157.4	300	6.48	34.015	2.23	26.735	131.9	0.631
220	7.80	34.013	2.72	2.16	42.	0.06	29.1	149.4	400	5.89	34.103	1.14	26.880	118.1	0.760
257	7.21	34.024	2.58	2.30	47.	0.00	31.2	140.6	500	5.65	34.228	0.59	27.008	106.0	0.878
313	6.29	34.013	2.10	2.54	59.	0.01	34.9	129.6							
383	5.96	34.084	1.28	2.79	69.	0.01	38.3	120.3							
454	5.70	34.163	0.80	2.98	77.	0.02	40.5	111.4							
528	5.62	34.264	0.50	3.04	85.	0.11	40.2	102.9							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

70053

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
36 06.5N	121 54.0W	4/18/78	0145	GMT	1082M	310	18KTY	1	310 3 5						
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
2	13.46	32.529	6.28	0.48	4.	0.00	0.4	352.8	0	13.46	32.529	6.28	24.413	352.8	0.000
11	13.13	32.771	6.40	0.53	5.	0.04	1.4	326.7	10	13.17	32.751	6.40	24.640	331.1	0.034
28	12.51	32.992	6.12	0.62	8.	0.13	3.5	300.9	20	12.91	32.899	6.25	24.804	315.4	0.067
37	11.45	33.186	5.31	0.91	13.	0.32	9.4	267.7	30	12.27	33.040	5.94	25.037	293.3	0.097
46	10.94	33.248	4.96	1.05	14.	0.35	11.8	254.4	50	10.73	33.286	4.82	25.510	248.3	0.151
59	10.33	33.376	4.50	1.25	17.	0.17	15.3	234.9	75	9.91	33.552	3.97	25.858	215.2	0.210
72	9.98	33.524	4.05	1.41	20.	0.07	18.5	218.3	100	9.52	33.734	3.39	26.064	195.6	0.261
89	9.63	33.653	3.63	1.57	24.	0.09	21.3	203.2	125	9.34	33.847	3.08	26.182	184.3	0.309
111	9.45	33.798	3.20	1.71	27.	0.06	23.7	189.6	150	9.26	33.905	2.87	26.240	178.8	0.356
129	9.31	33.856	3.05	1.77	29.	0.03	24.9	183.2	200	8.61	34.045	2.41	26.453	158.7	0.442
155	9.24	33.915	2.83	1.91	31.	0.05	25.8	177.7	250	7.90	34.122	1.82	26.621	142.7	0.519
181	8.87	34.001	2.60	2.02	34.	0.02	27.7	165.7	300	7.46	34.168	1.37	26.720	133.3	0.590
208	8.50	34.059	2.32	2.13	38.	0.02	29.3	155.9	400	6.42	34.181	0.88	26.873	118.7	0.721
243	7.97	34.112	1.90	2.30	46.	0.08	31.5	144.4	500	5.59	34.225	0.55	27.012	105.6	0.839
295	7.51	34.165	1.41	2.51	53.	0.00	34.4	134.1							
562	6.80	34.175	1.03	2.68	64.	0.00	37.4	124.0							
428	6.16	34.187	0.79	2.79	72.	0.08	39.0	115.0							
502	5.58	34.225	0.54	2.99	84.	0.02	41.7	105.3							

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CALCOFI CRUISE 7804

70060

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
35 53.0N	122 22.5W	4/17/78	1937	GMT	3164M	340	9KT	1	310 6 6						
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
1	14.34	32.850	6.13	0.45	4.	0.00	0.1	346.4	0	14.34	32.850	6.13	24.479	346.4	0.000
11	13.99	32.846	6.12	0.45	4.	0.00	0.1	339.8	10	14.01	32.849	6.12	24.545	340.1	0.034
30	13.96	32.848	6.18	0.45	4.	0.00	0.1	339.0	20	13.98	32.847	6.15	24.552	339.5	0.068
39	13.92	32.848	6.19	0.45	4.	0.00	0.1	338.3	30	13.96	32.848	6.18	24.556	339.0	0.102
49	13.43	32.872	6.29	0.43	4.	0.00	0.1	327.0	50	13.31	32.881	6.28	24.713	324.2	0.169
63	11.58	33.002	5.90	0.68	6.	0.10	3.9	283.6	75	10.68	33.125	5.43	25.393	259.4	0.242
76	10.63	33.133	5.39	0.91	11.	0.07	9.2	257.8	100	9.88	33.403	4.53	25.733	225.2	0.303
96	9.83	33.337	4.72	1.21	16.	0.09	14.9	229.7	125	9.99	33.751	3.50	25.998	201.8	0.357
119	10.04	33.691	3.69	1.47	21.	0.06	19.4	206.9	150	9.66	33.896	3.00	26.167	185.8	0.406
138	9.82	33.841	3.19	1.68	26.	0.06	22.4	192.2	200	8.76	34.047	2.41	26.430	160.8	0.495
166	9.42	33.944	2.82	1.93	31.	0.05	24.9	178.3	250	7.93	34.096	2.05	26.595	145.1	0.573
194	8.86	34.051	2.49	2.05	35.	0.03	27.6	163.4	300	7.45	34.127	1.66	26.689	136.2	0.646
221	8.44	34.083	2.18	2.17	40.	0.07	29.2	153.3	400	6.45	34.168	0.99	26.859	120.1	0.779
259	7.79	34.096	2.02	2.34	46.	0.00	31.8	143.1	500	5.55	34.210	0.63	27.006	106.2	0.898
314	7.37	34.137	1.53	2.50	54.	0.01	34.2	134.3							
384	6.64	34.164	1.05	2.70	64.	0.01	37.4	122.7							
453	5.88	34.183	0.81	2.88	75.	0.01	40.2	112.0							
529	5.43	34.230	0.51	2.94	85.	0.12	41.1	103.2							

RV DAVID STARR JORDAN

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70070

LATITUDE 35 33.0N	LONGITUDE 123 06.0W	MO/DAY/YR 4/17/78	MESSENGER TIME			BOTTOM 3731M	WIND 290	SPEED 8KT	WEATHER 1	DOMINANT WAVES				
			NO2	NO3	DT					NO2	NO3	DT		
1 13.77	32.818	6.20	0.21	4.		0.0	337.5	0	13.77	32.818	6.20	24.572	337.5	0.000
10 13.77	32.816	6.17	0.20	4.		0.0	337.7	10	13.77	32.816	6.17	24.571	337.7	0.034
29 13.68	32.818	6.13	0.18	4.		0.0	335.8	20	13.72	32.817	6.15	24.582	336.6	0.068
38 13.68	32.822	6.23	0.14	4.		0.0	335.5	30	13.68	32.821	6.14	24.591	335.8	0.101
48 13.57	32.825	6.16	0.13	4.		0.0	333.1	50	13.50	32.839	6.15	24.642	330.8	0.168
62 12.79	32.934	6.07	0.16	5.		0.0	310.4	75	11.63	33.02	5.85	25.161	281.5	0.245
75 11.63	33.042	5.85	0.32	6.		2.9	281.5	100	9.68	33.203	5.00	25.624	237.4	0.310
94 9.88	33.133	5.21	0.86	14.		12.5	245.6	125	9.13	33.472	4.34	25.923	209.0	0.367
117 9.39	33.402	4.48	1.24	20.		18.4	218.0	150	8.64	33.673	3.82	26.156	186.9	0.417
136 8.80	33.555	4.16	1.37	20.		18.5	197.8	200	8.22	33.929	3.09	26.420	161.7	0.505
163 8.57	33.765	3.51	1.86	31.		24.8	178.8	250	7.62	34.018	2.72	26.580	146.6	0.584
191 8.33	33.907	3.11	1.96	35.		26.5	164.8	300	6.90	34.024	2.34	26.685	136.6	0.657
219 7.98	33.955	3.08	2.04	38.		28.4	156.2	400	5.74	34.057	1.35	26.862	119.9	0.790
256 7.55	34.027	2.64	2.21	44.		30.6	144.9	500	5.31	34.163	0.68	26.998	107.0	0.909
312 6.72	34.016	2.27	2.45	54.		33.8	134.8							
383 5.85	34.039	1.52	2.72	68.		38.4	122.4							
454 5.51	34.117	0.91	2.98	79.		41.2	112.6							
530 5.18	34.188	0.60	3.17	88.		42.7	103.6							

RV DAVID STARR JORDAN

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73053

LATITUDE 35 31.4N	LONGITUDE 121 28.6W	MO/DAY/YR 4/16/78	MESSENGER TIME			BOTTOM 741M	WIND 130	SPEED 14KT	WEATHER	DOMINANT WAVES			
			NO2	NO3	DT					NO2	NO3	DT	
1 13.11	32.634	0.84U	5.	0.08	0.6	338.4	0	13.11	32.634	24.563	338.4	0.000	
10 13.07	32.643	0.58	6.	0.08	0.5	337.0	10	13.07	32.643	24.578	337.0	0.034	
29 12.86	32.745	0.58	5.	0.41	1.4	325.6	20	12.96	32.699	24.641	331.0	0.067	
39 12.44	32.942	0.73	9.	0.27	4.0	303.3	30	12.83	32.766	24.718	325.6	0.100	
53 11.46	33.138	0.98	11.	0.27	9.7	271.5	50	11.70	33.108	25.198	278.0	0.160	
67 10.29	33.189	1.16	13.	0.10	12.1	248.1	75	10.00	33.267	25.621	237.7	0.225	
90 9.76	33.434	1.42	19.	0.06	17.3	221.4	100	9.58	33.537	25.901	211.1	0.282	
109 9.47	33.625	1.57	24.	0.10	20.8	202.8	125	9.50	33.786	26.107	191.5	0.333	
128 9.51	33.809	1.73	27.	0.07	23.0	189.7	150	9.18	33.885	26.237	179.1	0.380	
146 9.25	33.869	1.82	30.	0.06	24.7	181.3	200	8.47	34.043	26.472	156.8	0.465	
174 8.77	33.966	2.26U	35.	0.04	27.1	166.8	250	8.00	34.090	26.580	146.6	0.543	
207 8.41	34.058	2.21	40.	0.09	29.1	154.7	300	7.41	34.128	26.696	135.6	0.616	
234 8.21	34.083	2.26	43.	0.11	30.0	150.0	400	6.65	34.207	26.863	119.7	0.749	
281 7.57	34.102	2.43	50.	0.12	32.1	139.6	500	5.91	34.230	26.977	108.9	0.869	
352 7.19	34.171	2.61	58.	0.03	35.1	129.4							
411 6.56	34.208	2.79	68.	0.03	37.4	118.4							
491 5.97	34.226	2.87	77.			39.5	109.8						
571 5.51	34.257	2.98	86.			41.0	102.1						

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

73060

LATITUDE 35 17.5N	LONGITUDE 121 57.9W	MO/DAY/YR 4/16/78	MESSENGER TIME			BOTTOM 2222M	WIND 310	SPEED 10KT	WEATHER	DOMINANT WAVES				
			NO2	NO3	DT					NO2	NO3	DT		
1 14.55	32.826	6.07	0.36	5.	0.00	0.1	352.4	0	14.55	32.826	6.07	24.416	352.4	0.000
11 14.12	32.814	6.10	0.37	5.	0.00	0.1	344.7	10	14.15	32.817	6.10	24.491	345.2	0.035
30 14.05	32.813	6.12	0.36	5.	0.00	0.1	343.4	20	14.09	32.816	6.11	24.504	344.1	0.069
39 14.03	32.816	6.14	0.36	5.	0.01	0.0	342.8	30	14.05	32.813	6.12	24.511	343.4	0.104
49 13.30	32.877	6.25	0.34	5.	0.01	0.0	324.2	50	13.21	32.888	6.23	24.736	321.9	0.171
63 12.00	32.995	5.81	0.52	7.	0.17	2.6	291.5	75	10.74	33.059	5.55	25.332	265.2	0.244
77 10.56	33.072	5.50	0.82	11.	0.09	8.5	261.1	100	10.35	33.499	4.26	25.741	226.3	0.306
96 10.39	33.436	4.43	1.25	17.	0.05	19.7	231.4	125	9.94	33.751	3.52	26.007	201.0	0.360
119 10.08	33.711	3.64	1.54	23.	0.03	20.6	206.0	150	9.40	33.856	3.22	26.178	184.7	0.409
137 9.66	33.805	3.34	1.76	26.	0.03	25.1	192.4	200	8.80	34.008	2.65	26.394	164.2	0.498
165 9.16	33.902	3.10	2.00	31.	0.04	25.4	177.5	250	8.12	34.062	2.42	26.539	150.4	0.579
193 8.87	33.991	2.71	2.09	35.	0.10	26.9	166.5	300	7.43	34.082	1.96	26.657	139.3	0.653
220 8.57	34.040	2.51	2.24	39.	0.03	28.9	158.4	400	6.48	34.161	0.95	26.850	120.9	0.789
258 8.00	34.063	2.39	3.39	44.	0.07	30.7	148.5	500	5.68	34.220	0.58	26.998	106.9	0.909
312 7.29	34.087	1.81	2.61	54.	0.03	34.0	136.9							
381 6.74	34.160	1.06	2.87	65.	0.03	37.7	124.3							
452 5.82	34.164	0.76	3.07	79.	0.12	40.6	112.7							
529 5.59	34.242	0.48	3.25	87.	0.04	42.5	104.2							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

73070

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
34 58.0N	122 40.0W	4/17/78	0618	GMT	3919M	320	8KT	1							
1	14.15	32.861	6.00	0.41	4.	0.1	341.8	0	14.15	32.861	6.00	24.527	341.8	0.000	
10	14.05	32.857	6.05	0.42	4.	0.1	340.2	10	14.05	32.857	6.05	24.545	340.2	0.034	
29	13.92	32.845	6.06	0.39	4.	0.1	338.5	20	13.98	32.850	6.06	24.552	339.5	0.068	
38	13.86	32.847	6.08	0.35	4.	0.1	337.2	30	13.91	32.846	6.06	24.565	338.2	0.102	
47	13.75	32.844	6.14	0.35	4.	0.2	335.2	50	13.74	32.878	6.14	24.624	332.6	0.169	
61	13.49	32.986	6.08	0.31	3.	0.2	319.8	75	12.35	32.929	5.99	24.938	302.7	0.249	
75	12.35	32.929	5.99	0.43	4.	0.8	302.7	100	10.20	33.133	5.17	25.482	251.0	0.319	
94	10.61	33.071	5.34	0.92	10.	9.5	262.0	125	9.17	33.589	4.58	25.851	215.8	0.378	
117	9.38	33.308	4.75	1.24	17.	14.9	224.9	150	8.69	33.594	4.17	26.087	193.4	0.430	
136	8.97	33.487	4.37	1.50	22.	18.8	205.4	200	8.18	33.892	3.43	26.399	163.8	0.520	
164	8.47	33.685	3.97	1.81	28.	22.0	183.3	250	7.61	34.000	2.84	26.567	147.8	0.600	
192	8.30	33.863	3.45	1.97	32.	25.2	167.6	300	7.01	34.018	2.43	26.665	138.5	0.674	
219	7.87	33.938	3.40	2.08	36.	26.2	155.9	400	5.92	34.068	1.36	26.848	121.2	0.809	
257	7.56	34.008	2.70	2.26	42.	27.2	196.5	500	5.70	34.196	0.61	26.976	109.0	0.929	
313	6.83	34.014	2.38	2.51	51.	32.7	136.4								
383	5.92	34.035	1.58	2.81	66.	37.0	123.5								
454	5.93	34.157	0.75	3.06	76.	38.0	114.5								
530	5.46	34.203	0.52	3.27	84.	41.1	105.6								

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

77051

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
35 02.0N	120 56.5W	4/16/78	0853	GMT	277M	310	12KT								
1	13.30	32.721	6.20	0.44	4.	0.00	0.0	335.6	0	13.30	32.721	6.20	24.592	335.6	0.000
10	13.30	32.723	6.19	0.42	4.	0.01	0.5	335.5	10	13.30	32.723	6.19	24.594	335.5	0.034
28	12.80	33.024	5.81	0.67	8.	0.07	4.1	303.9	20	13.02	32.830	5.98	24.729	322.6	0.067
42	11.47	33.346	4.76	1.09	14.	0.38	11.6	256.3	30	12.62	33.079	5.65	25.000	296.8	0.098
51	10.88	33.394	4.52	1.18	16.	0.18	12.7	292.7	50	10.94	33.394	4.54	25.557	243.8	0.152
65	10.23	33.443	4.33	1.36	17.	0.09	16.1	228.3	75	9.96	33.575	3.92	25.867	214.3	0.209
79	9.89	33.632	3.74	1.58	22.	0.05	19.7	208.8	100	9.74	33.812	3.16	26.089	193.2	0.261
97	9.78	33.799	3.19	1.74	26.	0.13	22.0	194.7	125	9.39	33.879	3.00	26.198	182.9	0.308
120	9.44	33.856	3.06	1.83	27.	0.02	23.4	185.2	150	9.13	33.977	2.63	26.317	171.6	0.353
139	9.27	33.938	2.80	1.93	30.	0.05	24.8	176.5	200	8.63	34.069	2.13	26.469	157.1	0.437
172	8.86	34.032	2.34	2.18	36.	0.04	27.5	163.5							
200	8.63	34.069	2.13	2.27	38.	0.05	29.0	157.1							
238	8.30	34.107	1.87	2.24	43.	0.14	27.9	149.5							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

77055

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
34 54.5N	121 13.0W	4/16/78	0445	GMT	556M	310	20KT								
1	14.54	33.005	5.81	0.52	5.	0.1	339.1	0	14.54	33.005	5.81	24.556	339.1	0.000	
11	14.54	33.002	5.73	0.45	5.	0.1	339.3	10	14.54	33.005	5.74	24.554	339.3	0.034	
30	14.43	32.978	6.02	0.42	5.	0.1	338.8	20	14.49	32.993	5.86	24.556	339.1	0.068	
39	13.26	32.962	6.00	0.46	6.	0.1	317.1	30	14.43	32.978	6.02	24.559	338.8	0.102	
48	12.26	33.095	5.45	0.70	8.	4.2	288.8	50	12.09	33.113	5.38	25.129	284.5	0.164	
62	11.22	33.165	5.09	0.82	10.	5.8	265.3	75	10.45	33.226	4.86	25.512	248.1	0.231	
76	10.41	33.230	4.84	1.15	14.	10.8	247.0	100	10.34	33.509	4.36	25.750	225.4	0.291	
95	10.42	33.443	4.51	1.31	17.	14.5	231.4	125	9.84	33.750	3.53	26.024	199.4	0.345	
118	9.97	33.706	3.77	1.60	23.	19.3	204.6	150	9.38	33.863	3.18	26.188	183.7	0.393	
136	9.64	33.799	3.21	1.75	25.	21.6	192.5	200	8.63	34.023	2.40	26.432	160.7	0.481	
164	9.13	33.917	3.14	1.99	31.	24.1	175.9	250	8.02	34.091	2.00	26.578	146.8	0.560	
191	8.75	33.996	2.56	2.18	35.	25.9	164.3	300	7.34	34.074	1.84	26.663	138.7	0.633	
219	8.39	34.066	2.15	2.26	40.	28.5	153.8	400	6.53	34.145	0.99	26.831	122.7	0.769	
255	7.96	34.090	1.99	2.40	44.	30.5	145.9	500	5.97	34.235	0.51	26.974	109.2	0.892	
310	7.21	34.068	1.80	2.54	51.	32.5	137.3								
380	6.59	34.118	1.14	2.74	62.	35.7	125.5								
449	6.37	34.205	1.02U	2.92	69.	37.2	116.3								
526	5.69	34.239	0.46	3.15	83.	40.6	105.5								

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

77060

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
34 44.0N	121 34.0W	4/16/78	0000	GMT	888M	250	29KT	6							
2	14.19	32.833	6.09	0.46	5.	0.00	0.0	344.7	0	14.19	32.833	6.09	24.497	344.7	0.000
11	14.20	32.831	6.11	0.44	5.	0.00	0.0	345.0	10	14.20	32.832	6.11	24.494	345.0	0.034
31	14.01	32.946	6.17	0.43	5.	0.00	0.0	332.8	20	14.11	32.885	6.14	24.551	339.5	0.069
40	13.77	33.109	5.98	0.49	5.	0.20	0.6	316.2	30	14.02	32.943	6.17	24.615	333.4	0.102
49	12.92	33.234	5.56	0.66	6.	0.22	4.5	290.7	50	12.80	33.250	5.49	25.098	287.4	0.165
64	11.31	33.413	4.60	1.11	13.	0.06	12.7	248.6	75	11.01	33.465	4.40	25.599	239.8	0.231
78	10.99	33.472	4.37	1.27	15.	0.03	14.7	238.8	100	10.52	33.637	3.83	25.819	218.8	0.289
96	10.63	33.606	3.93	1.43	19.	0.03	17.6	222.8	125	9.89	33.774	3.39	26.033	198.5	0.342
120	9.99	33.756	3.43	1.63	23.	0.07	21.0	201.2	150	9.52	33.863	3.11	26.165	186.0	0.390
139															

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

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LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
34 25.0N	122 16.0W	4/15/78	1614	GMT	3919M	180	19KT	1	180 5 4						
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
1	14.26	32.815	5.11U	0.39	5.	0.00	0.1	347.4	0	14.26	32.815	5.57	24.469	347.4	0.000
10	14.27	32.815	5.77	0.52	4.	0.00	0.1	347.6	10	14.27	32.815	5.77	24.467	347.6	0.035
29	14.08	32.818	5.75	0.29	4.	0.00	0.1	343.6	20	14.17	32.816	5.76	24.480	346.3	0.069
38	14.38	32.958	6.17	0.28	4.	0.00	0.1	339.3	30	14.12	32.835	5.80	24.512	343.2	0.104
47	14.36	33.055	5.99	0.28	4.	0.00	0.1	331.8	50	14.16	33.090	5.87	24.699	325.5	0.171
62	13.09	33.194	5.40	0.45	6.	0.46	2.6	296.9	75	12.05	33.221	5.14	25.220	275.9	0.247
76	11.97	33.220	5.12	0.69	8.	0.12	7.0	274.4	100	10.41	33.438	4.01	25.683	231.8	0.311
95	10.66	33.393	4.04	1.08	14.	0.03	14.8	239.0	125	9.63	33.620	3.72	25.956	205.8	0.366
119	9.76	33.582	3.88	1.37	20.	0.00	19.7	210.5	150	9.57	33.780	2.89	26.124	189.9	0.416
138	9.45	33.693	3.30	1.56	24.	0.00	22.3	197.4	200	8.62	33.982	2.03	26.402	163.5	0.506
166	9.27	33.881	2.41	1.87	29.	0.00	25.1	180.7	250	7.82	34.042	1.89	26.569	147.6	0.586
194	8.74	33.968	2.11	1.95	33.	0.02	27.1	166.2	300	7.18	34.048	1.82	26.665	138.5	0.659
222	8.19	34.015	1.81	2.03	38.	0.00	28.9	154.7	400	6.48	34.154	1.27	26.845	121.5	0.795
259	7.72	34.046	1.95	2.21	44.	0.02	31.2	145.8	500	5.75	34.208	0.61	26.980	108.7	0.916
315	7.01	34.048	2.36	2.37	53.	0.04	33.7	136.1							
385	6.61	34.146	1.74	2.69	64.	0.00	37.6	123.7							
455	6.00	34.173	0.81	2.85	75.	0.09	40.1	114.2							
532	5.64	34.238	0.49	3.04	83.	0.00	42.5	105.0							

RV DAVID STARR JORDAN

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LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
34 24.8N	120 36.0W	4/14/78	1856	GMT	277M	280	6KT	2	290 5 6						
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
0	13.13	33.181	0.63	9.	0.14	3.9	298.6	0	13.15	33.181	24.981	298.6	0.000		
11	12.17	33.355	0.96	13.	0.41	9.5	268.0	10	12.24	33.343	25.277	270.4	0.028		
30	11.40	33.559	1.26	18.	0.24	15.4	239.4	20	11.78	33.460	25.456	253.4	0.055		
44	10.42	33.738	1.53	22.	0.09	20.1	209.6	30	11.40	33.559	25.603	239.4	0.079		
54	10.34	33.770	1.59	23.	0.09	20.6	205.9	50	10.35	33.762	25.946	206.8	0.124		
68	9.87	33.859	1.72	26.	0.06	23.4	191.7	75	9.77	33.890	26.144	187.9	0.174		
82	9.71	33.913	1.88	29.	0.05	24.7	185.2	100	9.46	33.962	26.251	177.8	0.220		
101	9.45	33.963	2.03	32.	0.14	25.9	177.4	125	9.24	34.003	26.319	171.3	0.264		
124	9.25	34.000	2.03	36.	0.07	27.1	171.6	150	9.01	34.038	26.383	165.2	0.307		
143	9.10	34.027	2.13	36.	0.11	27.6	167.3	200	8.47	34.121	26.534	150.9	0.368		
172	8.73	34.069	2.25	41.	0.08	29.3	158.6								
196	8.50	34.109	2.33	44.	0.04	30.7	152.2								

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

80055

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
34 19.0N	120 48.0W	4/14/78	2227	GMT	778M	240	10KT	1	270 3 5						
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
0	14.47	33.009	6.33	0.31	6.	0.5	337.4	0	14.47	33.009	6.33	24.574	337.4	0.000	
9	13.29	33.058	6.17	0.47	7.	1.7	310.7	10	13.27	33.067	6.16	24.862	309.9	0.032	
28	12.99	33.111	5.90	0.53	8.	3.5	301.1	20	13.12	33.080	6.01	24.926	303.8	0.063	
37	12.70	33.298	5.24	0.71	10.	7.4	281.9	30	12.94	33.154	5.76	24.997	297.1	0.093	
46	12.24	33.395	4.81	0.84	12.	10.3	266.4	50	12.03	33.447	4.58	25.398	258.9	0.149	
59	11.58	33.546	4.10	1.13	17.	14.4	243.5	75	10.91	33.643	5.71	25.755	224.9	0.210	
73	11.04	33.622	3.78	1.36	19.	16.9	228.5	100	9.73	33.837	3.05	26.110	191.2	0.262	
91	9.95	33.796	3.16	1.60	26.	22.2	197.6	125	9.46	33.900	2.87	26.203	182.4	0.310	
113	9.59	33.866	2.98	1.67	29.	23.9	186.8	150	9.23	33.945	2.68	26.277	175.4	0.355	
131	9.41	33.913	2.81	1.85	30.	25.0	180.5	200	8.76	34.039	2.32	26.425	161.3	0.441	
157	9.16	33.954	2.64	2.01	34.	26.2	173.6	250	8.15	34.129	1.79	26.589	145.7	0.520	
185	8.88	34.014	2.45	2.06	35.	27.6	164.9	300	7.69	34.167	1.41	26.687	136.4	0.592	
211	8.66	34.055	2.22	2.12	38.	28.5	158.6	400	6.73	34.222	0.81	26.864	119.7	0.726	
246	8.19	34.123	1.83	2.28	45.	30.9	146.7	500	5.90	34.281	0.43	27.019	105.0	0.844	
300	7.69	34.167	1.41	2.47	52.	33.0	136.4								
368	7.12	34.202	1.00	2.65	61.	35.4	126.1								
439	6.28	34.245	0.61	2.87	75.	38.3	112.2								
515	5.86	34.288	0.41	3.06	82.	40.6	103.9								

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

80060

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
34 09.0N	121 10.0W	4/15/78	0315	GMT	2222M	190	14KT	1	210 2 6						
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
0	14.36	33.179	6.76	0.31	2.	0.00	0.1	322.7	0	14.36	33.179	6.76	24.728	322.7	0.000
10	14.30	33.177	6.72	0.29	2.	0.00	0.1	321.7	10	14.30	33.177	6.72	24.739	321.7	0.032
28	13.72	33.192	6.43	0.33	5.	0.08	0.7	309.1	20	14.04	33.182	6.56	24.796	316.3	0.064
37	13.28	33.222	5.89	0.46	7.	0.22	3.2	298.4	30	13.63	33.199	6.32	24.893	307.0	0.095
46	12.77	33.283	5.35	0.63	8.	0.31	6.2	284.3	50	12.35	33.332	5.08	25.247	273.2	0.154
59	11.41	33.444	4.54	0.99	13.	0.16	12.8	248.0	75	10.71	33.563	4.16	25.729	227.4	0.217
73	10.72	33.548	4.19	1.23	17.	0.07	16.5	228.6	100	10.40	33.707	3.64	25		

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

80070

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
33 48.5N	121 51.0W	4/13/78	0953	GMT	3738M	350	20KT	2							
Z	T	S	O2	P04	SI03	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	14.58	33.093	6.02		4.	0.02	0.0	333.4	0	14.58	33.093	6.02	24.615	333.4	0.000
10	14.61	33.101	6.00	0.38	4.	0.02	0.0	333.5	10	14.61	33.101	6.00	24.615	333.5	0.033
29	14.49	33.158	6.02	0.37	4.	0.00	0.0	326.9	20	14.55	33.121	6.01	24.642	330.9	0.067
38	14.33	33.182	6.10	0.33	4.	0.00	0.0	321.9	30	14.47	33.163	6.03	24.690	326.3	0.100
47	13.14	33.232	5.59	0.56	7.	0.28	3.5	295.0	50	12.78	33.266	5.37	25.115	285.9	0.161
61	11.75	33.388	4.68	0.92	11.	0.08	10.7	258.1	75	11.32	33.464	8.40	25.544	245.0	0.228
75	11.32	33.464	4.40	1.04	13.	0.05	15.1	245.0	100	9.78	33.591	3.92	25.910	210.2	0.285
94	9.98	33.534	4.08	1.29	18.	0.02	18.3	217.5	125	9.18	33.800	3.32	26.171	185.4	0.335
117	9.41	33.751	3.46	1.53	24.	0.04	22.3	192.5	150	8.71	33.929	2.84	26.347	168.8	0.380
135	8.92	33.849	3.16	1.74	29.	0.02	25.0	177.8	200	7.88	34.018	2.73	26.541	150.2	0.461
163	8.56	33.980	2.61	1.94	35.	0.03	27.6	162.7	250	7.38	34.051	2.21	26.640	140.9	0.536
191	8.06	34.012	2.78	2.02	38.	0.04	28.4	153.1	300	6.95	34.060	1.79	26.706	134.6	0.607
219	7.55	34.025	2.55	2.15	43.	0.03	30.5	145.1	400	6.12	34.143	0.83	26.881	118.0	0.738
256	7.36	34.054	2.14	2.27	48.	0.04	31.8	140.3	500	5.55	34.205	0.57	27.003	106.5	0.856
311	6.84	34.060	1.70	2.47	55.	0.00	35.2	133.0							
381	6.25	34.132	0.92	2.71	68.	0.01	38.9	120.3							
451	5.82	34.165	0.70	2.84	76.		40.0	112.6							
525	5.43		0.51	2.94	84.		41.7								

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

82047

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
34 16.5N	119 59.0W	4/14/78	1320	GMT	547M	250	14KT	2	270 2 3						
Z	T	S	O2	P04	SI03	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	13.74	33.333	5.41	0.67	8.	0.10	2.4	299.2	0	13.74	33.333	5.41	24.975	299.2	0.000
10	13.21	33.367	5.37	0.73	9.	0.18	4.0	286.4	10	13.21	33.367	5.37	25.109	286.4	0.029
29	11.26	33.546	3.65U	1.25	16.	0.12	14.7	237.9	20	12.17	33.456	4.94	25.378	260.8	0.057
43	10.64	33.620	3.79	1.42	19.	0.11	17.5	221.9	30	11.20	33.554	4.47	25.634	236.4	0.082
52	10.40	33.682	2.79U	1.59	20.	0.09	19.4	213.4	50	10.45	33.670	3.64	25.858	215.1	0.127
66	10.14	33.741	3.42	1.65	22.	0.09	20.5	204.8	75	10.01	33.790	3.28	26.027	199.1	0.179
80	9.94	33.813	3.46U	1.73	24.	0.06	22.3	196.2	100	9.70	33.878	2.90	26.147	187.7	0.228
94	9.78	33.859		1.82	26.	0.06	25.7	190.3	125	9.47	33.959	2.56	26.247	178.1	0.274
117	9.51	33.928		1.93	29.	0.08	25.0	180.9	150	9.30	34.023	2.24	26.326	170.7	0.318
135	9.43	33.992	2.17U	2.11	32.	0.06	27.2	174.9	200	8.68	34.111	1.70	26.493	154.8	0.401
163	9.15	34.041	1.76U	2.22	36.	0.08	28.7	167.0	250	8.14	34.157	1.20	26.612	143.5	0.478
191	8.77	34.098	1.78	2.36	41.	0.10	30.8	157.0	300	7.79	34.181	0.87	26.683	136.8	0.551
219	8.50	34.129	1.52	2.49	45.	0.09	32.6	150.8	400	6.93	34.221	0.52	26.837	122.2	0.686
256	8.07	34.160	1.14	2.62	50.	0.08	34.3	142.3	500	6.45	34.244	0.22	26.919	114.4	0.810
312	7.72	34.183	0.83	2.69	56.	0.05	36.5	135.6							
363	7.29	34.201	0.75	2.68	63.	0.06	37.1	128.4							
419	6.76	34.230	0.40	2.95	76.		36.0	119.3							
476	6.55	34.243	0.26	3.14	87.		33.8	115.7							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

83042

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
34 10.0N	119 29.5W	4/13/78	1700	GMT	205M	300	4KT	2	260 2 5						
Z	T	S	O2	P04	SI03	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
0	14.02	33.297	5.67U	0.86	7.	0.24	1.6	307.3	0	14.02	33.297	6.02	24.890	307.3	0.000
10	13.96	33.296	6.02	0.81	8.	0.21	1.6	306.2	10	13.96	33.296	6.02	24.901	306.2	0.031
29	13.28	33.342	4.69U	1.07	9.	0.29	4.9	289.6	20	13.77	33.310	5.71	24.993	297.5	0.061
38	12.28	33.421	4.03U	0.98	12.	0.32	10.2	265.2	30	13.17	33.352	5.34	25.103	287.0	0.090
52	11.37	33.518	4.30	1.78	15.	0.14	14.2	241.9	50	11.46	33.506	4.41	25.549	244.5	0.144
66	10.87	33.662	3.17U	2.13U	19.	0.12	17.4	222.7	75	10.62	33.709	3.64	25.858	215.2	0.201
80	10.50	33.727	1.80	20.	20.	0.10	19.1	211.7	100	10.05	33.852	3.04	26.067	195.3	0.253
98	10.10	33.858	3.09	1.93	25.	0.13	21.8	197.0	125	9.51	33.993	2.49	26.269	176.2	0.300
121	9.59	33.972	2.55	1.94	30.	0.11	25.1	178.9	150	9.13	34.090	2.23	26.406	163.1	0.343
144	9.19	34.070	2.28	2.11	36.	0.10	27.5	165.5							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

83051

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
33 52.0N	120 08.5W	4/13/78	1137	GMT	233M	270	9KT	2							
Z	T	S	O2	P04	SI03	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
0	15.03	33.270	6.15	0.29	3.	0.00	0.0	329.7	0	15.03	33.270	6.15	24.655	329.7	0.000
10	15.02	33.267	6.15	0.31	3.	0.00	0.0	329.7	10	15.02	33.267	6.15	24.654	329.7	0.033
29	12.72	33.406	5.27	0.61	9.	0.15	6.0	274.4	20	13.91	33.324	5.76	24.931	303.4	0.065
43	11.86	33.509	4.59	0.83	13.	0.27	10.7	251.1	30	12.63	33.417	5.21	25.260	272.0	0.094
52	11.81	33.520	4.51	0.89	14.	0.20	11.7	249.4	50	11.82	33.519	4.53	25.494	249.8	0.146
66	11.03	33.635	3.91	1.13	18.	0.32	13.7	227.4	75	10.85	33.669	3.76	25.787	221.9	0.205
81	10.76	33.687	3.69	1.22	20.	0.04	16.8	219.0	100	10.12	33.826	3.15	26.035	198.3	0.258
99	10.14	33.821	3.17	1.40	26.	0.04	20.8	198.9	125	9.82	33.894	2.8			

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

83055

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
33 44.0N	120 24.5W	4/13/78	0824	GMT	1073M	280	9KT	2							
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
1	14.23	33.311	6.42	0.21	1.	0.03	0.1	310.4	0	14.23	33.311	6.42	24.857	310.4	0.000
10	14.21	33.310	6.42	0.21	1.	0.02	0.1	310.1	10	14.21	33.310	6.42	24.860	310.1	0.031
29	13.60	33.343	5.73	0.46	6.	0.11	2.8	295.7	20	14.04	33.369	6.17	24.940	302.5	0.062
38	12.75	33.409	5.12	0.69	9.	0.28	6.9	274.7	30	13.52	33.352	5.66	25.032	293.7	0.092
47	11.59	33.465	4.62	0.89	12.	0.08	10.6	249.6	50	11.28	33.465	4.59	25.551	244.3	0.146
61	10.42	33.447	4.48	1.11	15.	0.07	15.0	231.1	75	9.92	33.507	4.30	25.822	218.6	0.204
75	9.92	33.507	4.30	1.23	18.	0.07	17.2	218.6	100	9.66	33.698	3.73	26.013	200.4	0.257
93	9.84	33.659	3.81	1.58	22.	0.10	19.3	206.0	125	9.27	33.893	3.11	26.229	179.9	0.305
116	9.27	33.792	3.49	1.54	25.	0.04	22.1	187.3	150	9.15	34.024	2.64	26.350	168.4	0.349
134	9.27	33.977	2.74	1.79	31.	0.00	24.3	173.6	200	8.79	34.118	2.04	26.480	156.0	0.432
162	9.04	34.028	2.56	1.98	34.	0.02	25.9	166.3	250	7.97	34.098	2.03	26.591	145.5	0.509
190	8.85	34.097	2.15	2.06	36.	0.04	28.1	158.3	300	7.49	34.179	1.34	26.724	132.9	0.581
217	8.65	34.136	1.91	2.10	40.	0.03	27.8	152.4	400	6.59	34.250	0.68	26.905	115.7	0.711
254	7.88	34.092	2.04	2.25	44.	0.02	30.7	144.6	500	6.08	34.282	0.44	26.997	107.0	0.828
510	7.44	34.202	1.15	2.56	55.	0.02	34.7	130.4							
380	6.72	34.243	0.75	2.73	65.	0.01	37.2	117.9							
450	6.33	34.263	0.55	2.76	71.		37.1	111.4							
525	5.96	34.291	0.39	2.93	78.		59.8	104.9							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

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LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
33 34.3N	120 45.0W	4/13/78	0400	GMT	1387M	260	8KT	2	310 4 6						
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
1	14.95	33.198	5.96	0.35	4.	0.01	0.1	333.3	0	14.95	33.198	5.96	24.617	333.3	0.000
10	14.88	33.194	5.98	0.34	4.	0.02	0.1	332.2	10	14.88	33.194	5.98	24.629	332.2	0.033
29	14.64	33.226	6.02	0.32	5.	0.00	0.1	329.9	20	14.73	33.213	6.01	24.673	327.9	0.066
39	14.53	33.228	5.99	0.31	5.	0.00	0.1	322.5	30	14.64	33.226	6.02	24.705	324.9	0.099
48	14.05	33.237	5.79	0.40	5.	0.24	1.3	312.3	50	13.90	33.237	5.75	24.867	309.4	0.163
62	12.73	33.238	5.43	0.52	7.	0.06	4.3	286.9	75	11.07	33.326	4.84	25.481	251.0	0.233
76	10.95	33.333	4.79	0.88	12.	0.01	11.6	248.3	100	9.95	33.555	4.11	25.854	215.6	0.292
95	10.13	33.502	4.26	1.16	17.	0.03	16.4	222.3	125	9.35	33.771	3.49	26.121	190.2	0.343
118	9.45	33.724	3.63		25.	0.01	21.5	195.1	150	9.00	33.901	3.05	26.278	175.2	0.390
137	9.21	33.833	3.29	1.57	27.	0.00	23.6	183.3	200	8.24	34.028	2.51	26.496	154.6	0.474
165	8.75	33.962	2.80	1.93	33.	0.07	26.2	166.8	250	7.74	34.087	2.01	26.616	143.1	0.550
192	8.32	34.018	2.56	1.98	37.	0.10	27.9	156.4	300	7.30	34.131	1.51	26.714	133.8	0.621
220	8.07	34.046	2.38	2.10	41.	0.05	28.9	150.7	400	6.58	34.212	0.80	26.876	118.4	0.753
257	7.66	34.095	1.92	2.30	47.	0.07	31.4	141.4	500	5.90	34.260	0.41	27.010	105.8	0.871
313	7.20	34.138	1.41	2.44	55.	0.05	33.2	131.9							
383	6.68	34.193	0.90	2.63	64.	0.04	35.7	121.1							
453	6.26	34.258	0.54	2.77	73.		37.5	111.0							
529	5.64	34.262	0.38	2.97	83.		41.3	103.2							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

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LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
33 14.5N	121 26.0W	4/12/78	2110	GMT	3738M	290	8KT	2	320 6 7						
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
0	14.94	33.022	5.98	0.97	4.	0.01	0.1	346.0	0	14.94	33.022	5.98	24.484	346.0	0.000
9	14.88	33.020	5.97	0.59	3.	0.00	0.1	344.9	10	14.88	33.020	5.97	24.495	344.9	0.035
28	14.81	33.021	5.99	0.51	3.	0.01	0.1	343.4	20	14.85	33.021	5.98	24.502	344.2	0.069
37	14.67	33.067	6.07	0.48	4.	0.00	0.1	337.2	30	14.78	33.033	6.01	24.524	342.1	0.103
47	14.55	33.091	6.08	0.46	4.	0.01	0.1	333.0	50	14.43	33.097	6.07	24.648	330.3	0.171
60	13.86	33.128	6.03	0.42	4.	0.07	0.1	316.5	75	12.72	33.304	5.23	25.154	282.1	0.248
74	12.79	33.291	5.28	0.77	8.	0.12	6.5	284.1	100	11.06	33.449	4.51	25.577	241.9	0.314
93	11.58	33.442	4.59	1.06	13.	0.08	12.5	251.1	125	9.64	33.604	3.98	25.943	207.1	0.371
116	10.01	33.486	4.32	1.28	18.	0.09	17.1	221.6	150	9.04	33.837	3.34	26.223	180.5	0.420
135	9.34	33.739	3.60	1.64	24.	0.06	22.5	192.3	200	8.32	33.982	2.88	26.448	159.1	0.506
162	8.86	33.877	3.22	2.01	31.	0.07	25.2	174.8	250	7.60	34.049	2.23	26.607	144.1	0.584
190	8.43	33.964	2.92	2.05	35.	0.09	27.4	162.0	300	7.13	34.115	1.50	26.725	132.8	0.655
218	8.12	34.003	2.78	2.11	39.	0.25	27.9	154.6	400	6.28	34.178	0.77	26.888	117.3	0.785
255	7.52	34.055	2.13	2.45	47.	0.03	32.0	142.4	500	5.73	34.240	0.49	27.007	106.0	0.903
310	7.07	34.125	1.39	2.65	57.	0.01	35.5	131.2							
379	6.43	34.161	0.87	2.81	68.	0.00	38.4	120.3							
448	6.00	34.212	0.60	2.96	76.	0.02	39.0	111.2							
523	5.63	34.248	0.47	3.06	84.		40.6	104.2							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

87036

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
33 49.0N	118 40.0W	4/11/78	0257	GMT	833M	280	17KT	1	280	3	5				
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
1	15.39	33.192	6.08	0.24	5.	0.01	0.1	342.9	0	15.39	33.192	6.08	24.516	342.9	0.000
11	15.24	33.188	6.09	0.22	5.	0.02	0.1	340.0	10	15.26	33.190	6.09	24.541	340.5	0.034
30	13.44	33.319	5.98	0.31	6.	0.13	0.5	294.4	20	14.97	33.204	6.04	24.617	333.3	0.068
39	12.68	33.373	5.52	0.55	7.	0.27	5.0	276.0	30	13.44	33.319	5.98	25.025	294.4	0.099
49	12.07	33.424	4.94	0.69	10.	0.34	8.5	261.2	50	11.99	33.433	4.89	25.394	259.2	0.155
63	11.08	33.558	4.25	0.99	15.	0.10	14.2	234.7	75	10.69	33.681	3.74	25.825	218.3	0.215
77	10.64	33.701	3.66	1.22	20.	0.04	18.0	215.9	100	10.04	33.868	3.10	26.082	193.8	0.267
96	10.09	33.844	3.17	1.43	24.	0.10	21.2	196.3	125	9.76	33.993	2.69	26.226	180.2	0.314
120	9.85	33.965	2.78	1.67	28.	0.07	23.7	183.5	150	9.45	34.082	2.35	26.347	168.7	0.359
138	9.54	34.052	2.47	1.78	32.	0.03	25.5	172.2	200	8.95	34.157	1.94	26.487	155.4	0.441
166	9.36	34.104	2.23	1.88	34.	0.03	26.9	165.6	250	8.50	34.186	1.57	26.580	146.6	0.519
194	9.00	34.149	1.99	2.01	38.	0.02	28.4	156.7	300	8.07	34.218	1.29	26.670	138.0	0.592
221	8.78	34.175	1.76	2.08	41.	0.08	29.3	151.5	400	7.00	34.267	0.65	26.862	119.8	0.727
258	8.42	34.187	1.53	2.25	45.	0.04	31.1	145.3	500	6.29	34.309	0.34	26.991	107.5	0.847
513	7.96	34.227	1.22	2.40	51.	0.05	33.2	135.7							
383	7.16	34.257	0.74	2.57	62.	0.00	36.4	122.5							
454	6.57	34.293	0.45	2.76	71.	0.07	38.5	112.2							
532	6.14	34.315	0.31	2.91	80.	0.04	39.7	105.2							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

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LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
33 40.0N	118 58.0W	4/11/78	0812	GMT	851M	210	210	1	280	3	5				
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
1	16.02	33.282	5.88	0.43	3.	0.03	0.0	349.7	0	16.02	33.282	5.88	24.445	349.7	0.000
10	15.65	33.274	5.98	0.42	3.	0.02	0.0	342.4	10	15.65	33.274	5.98	24.521	342.4	0.035
30	14.65	33.290	6.14	0.48	4.	0.01	0.0	320.4	20	15.15	33.283	6.06	24.637	331.4	0.068
39	12.86	33.354	5.76	0.62	7.	0.22	4.0	280.6	30	14.65	33.290	6.14	24.752	320.4	0.101
49	12.44	33.381	5.52	0.68	8.	0.09	5.7	271.0	50	12.35	33.391	5.45	25.295	268.7	0.160
63	11.17	33.522	4.43	1.09	13.	0.12	13.1	238.1	75	10.92	33.622	4.03	25.737	226.6	0.222
77	10.91	33.634	3.99	1.23	16.	0.06	15.7	225.4	100	10.26	33.780	3.46	25.975	204.0	0.277
96	10.36	33.755	3.54	1.37	21.	0.09	18.3	207.3	125	9.71	33.918	2.99	26.176	185.0	0.326
119	9.84	33.883	3.12	1.55	25.	0.05	21.8	189.5	150	9.33	34.027	2.57	26.323	170.9	0.371
138	9.47	33.983	2.72	1.73	31.	0.05	24.0	176.2	200	8.66	34.159	1.89	26.534	151.0	0.453
166	9.17	34.071	2.39	1.97	34.	0.06	26.2	165.1	250	8.31	34.194	1.54	26.616	143.2	0.529
193	8.74	34.149	1.96	2.15	39.	0.00	28.8	152.8	300	7.86	34.216	1.21	26.699	135.3	0.601
221	8.48	34.174	1.72	2.28	43.	0.03	28.6	147.1	400	6.98	34.270	0.66	26.867	119.3	0.734
258	8.26	34.197	1.50	2.38	45.	0.05	31.1	142.2	500	6.24	34.315	0.40	27.002	106.5	0.853
530	6.06	34.322	0.38	2.95	82.	0.05	38.6	103.7							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

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LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
33 30.0N	119 19.0W	4/11/78	1246	GMT	1664M	280	12KT	2	300	4	4				
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
1	15.20	33.286	4.90U	0.34	4.	0.03	0.1	332.0	0	15.20	33.286	6.08	24.630	332.0	0.000
11	15.09	33.293	5.38U	0.34	5.	0.06	0.0	329.2	10	15.10	33.294	6.11	24.656	329.5	0.033
30	13.08	33.399	5.06U	0.55	8.	0.15	3.8	281.6	20	14.35	33.326	6.14	24.845	311.5	0.065
39	11.86	33.508	4.75	0.98	12.	0.35	10.6	251.2	30	13.08	33.399	5.63	25.159	281.6	0.095
48	11.02	33.609	4.03	1.08	16.	0.06	15.3	229.1	50	10.89	33.629	4.00	25.749	225.5	0.146
62	10.36	33.708	4.07U	1.30	20.	0.10	17.4	210.8	75	10.25	33.735	3.60	25.942	207.2	0.200
77	10.25	33.736	5.57	1.37	21.	0.09	18.3	206.9	100	9.78	33.879	2.95	26.134	188.9	0.250
95	9.85	33.853	2.98	1.54	25.	0.03	21.8	191.8	125	9.46	33.998	2.77	26.280	175.0	0.296
119	9.56	33.964	2.89	1.76	29.	0.02	24.5	179.0	150	9.13	34.087	2.36	26.403	163.4	0.339
137	9.26	34.056	2.52	1.91	33.	0.02	26.2	167.6	200	8.62	34.150	1.91	26.532	151.1	0.419
165	9.00	34.103	2.22	2.02	37.	0.05	27.3	160.1	250	8.19	34.188	1.71	26.629	141.9	0.495
193	8.67	34.145	1.95	2.07	40.	0.10	28.6	152.1	300	7.76	34.226	1.23	26.722	133.1	0.566
221	8.49	34.157	1.81	2.16	43.	0.02	29.9	148.5	400	6.92	34.275	0.70	26.880	118.1	0.697
258	8.10	34.196	1.67	2.34	48.	0.02	32.0	140.0	500	6.07	34.323	0.45	27.030	103.9	0.815
314	7.66	34.232	1.08	2.44	55.	0.05	33.5	131.2							
384	7.08	34.266	0.77	2.52	64.	0.00	35.9	120.8							
455	6.40	34.303	0.49	2.72	75.	0.14	37.5	109.3							
532	5.89	34.333	0.42	2.89	85.	0.08	39.7	100.9							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

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LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
33 20.0N	119 39.5W	4/11/78	1653	GMT	75M	250	13KT	2	290 4 5						
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	14.96	33.292	6.14	0.36	2.	0.01	0.1	326.6	0	14.96	33.292	6.14	24.687	326.6	0.000
11	14.86	33.290	6.17	0.33	2.	0.00	0.1	324.7	10	14.87	33.292	6.17	24.703	325.0	0.033
20	14.70	33.302	6.29	0.37	1.	0.00	0.4	320.6	20	14.70	33.302	6.29	24.750	320.6	0.065
30	14.02	33.313	6.23	0.35	1.	0.02	0.1	306.1	30	14.02	33.313	6.23	24.902	306.1	0.096
49	11.34	33.539	4.45	1.02	14.	0.15	13.3	239.8	50	11.20	33.560	4.25	25.641	235.8	0.151

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

87060

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
33 00.0N	120 21.5W	4/12/78	0614	GMT	733M	310	12KT	2	2						
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
0	14.97	33.171	5.84	0.44	4.	0.00	0.0	335.7	0	14.97	33.171	5.84	24.592	335.7	0.000
10	14.96	33.162	5.90	0.42	4.	0.00	0.0	336.1	10	14.96	33.162	5.90	24.587	336.1	0.034
29	14.86	33.174	5.93	0.41	4.	0.00	0.0	333.2	20	14.91	33.171	5.92	24.603	334.6	0.067
38	14.59	33.191	5.96	0.38	4.	0.02	0.0	326.5	30	14.84	33.178	5.93	24.623	332.7	0.101
48	13.87	33.195	5.98	0.39	4.	0.01	0.0	311.8	50	13.62	33.191	5.93	24.888	307.4	0.165
62	11.98	33.187	5.46	0.67	7.	0.17	5.9	277.0	75	10.51	33.306	4.88	25.564	243.1	0.234
76	10.42	33.315	4.84	1.00	13.	0.04	12.8	240.9	100	9.80	33.515	4.29	25.847	216.3	0.292
95	9.89	33.450	4.47	1.26	17.	0.11	15.7	222.3	125	9.40	33.740	3.65	26.089	193.2	0.344
118	9.53	33.716	3.72	1.47	22.	0.03	20.5	196.9	150	8.96	33.848	3.37	26.243	178.6	0.391
137	9.17	33.763	3.58	1.38	25.	0.02	21.6	187.9	200	8.33	34.077	2.37	26.521	152.2	0.475
165	8.75	33.951	3.07	1.88	32.	0.02	25.2	167.7	250	7.77	34.123	1.81	26.640	140.9	0.550
193	8.41	34.057	2.57	1.90	40.	0.08	26.8	154.8	300	7.42	34.160	1.46	26.719	133.4	0.621
221	8.08	34.113	1.83	2.14	43.	0.02	28.4	145.9	400	6.62	34.241	0.76	26.894	116.8	0.751
258	7.70	34.122	1.81	2.37	48.	0.00	31.9	139.9	500	6.29	34.271	0.59	26.962	110.3	0.871
314	7.34	34.174	1.31	2.57	55.	0.02	34.8	131.1							
363	6.70	34.233	0.81	2.78	65.	0.02	37.4	118.3							
454	6.44	34.254	0.68	2.77	70.		36.8	113.5							
531	6.19	34.283	0.53	2.91	75.	0.06	39.2	108.2							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

87070

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
32 39.6N	121 02.0W	4/12/78	1406	GMT	3738M	290	14KT	2	330 7 7						
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
2	15.05	33.159	5.90	0.54	4.	0.05	0.3	338.2	0	15.05	33.159	5.90	24.565	338.2	0.000
11	15.04	33.158	5.90	0.56	4.	0.00	0.2	338.1	10	15.04	33.158	5.90	24.566	338.1	0.034
30	15.04	33.152	5.89	0.40	4.	0.01	0.0	338.5	20	15.04	33.157	5.90	24.564	338.3	0.068
39	14.83	33.118	5.96	0.37	3.	0.01	0.0	336.7	30	15.04	33.152	5.89	24.562	338.5	0.102
49	14.72	33.111	5.91	0.34	3.	0.00	0.0	335.0	50	14.62	33.114	5.91	24.620	333.0	0.169
63	13.00	33.130	5.84	0.54	5.	0.03	1.6	299.9	75	11.74	33.153	5.49	25.224	275.4	0.245
77	11.56	33.158	5.41	0.75	8.	0.03	6.7	271.7	100	10.29	33.386	4.60	25.663	233.7	0.310
95	10.52	33.341	4.73	1.08	14.	0.03	13.5	240.6	125	9.44	33.593	4.05	25.967	204.8	0.365
119	9.61	33.539	4.20	1.42	20.	0.02	18.9	211.3	150	8.89	33.784	3.55	26.204	182.3	0.414
137	9.15	33.691	3.77	1.64	25.	0.01	22.4	193.0	200	8.41	34.027	2.59	26.469	157.1	0.500
165	8.68	33.874	3.31	1.91	31.	0.06	25.5	172.3	250	7.72	34.077	2.16	26.611	143.6	0.577
193	8.52	34.012	2.66	2.05	36.	0.10	28.0	159.7	300	7.36	34.154	1.46	26.724	132.9	0.649
221	8.04	34.047	2.46	2.13	41.	0.03	29.7	150.2	400	6.51	34.205	0.86	26.881	118.0	0.780
257	7.66	34.083	2.07	2.34	47.	0.04	31.9	142.3	500	5.99	34.268	0.47	26.997	107.0	0.898
312	7.28	34.171	1.30	2.60	55.	0.05	34.6	130.5							
382	6.61	34.190	0.96	2.78	65.	0.04	37.6	120.4							
453	6.25	34.247	0.59	2.92	73.		39.3	111.7							
530	5.81	34.273	0.45	3.09	81.		39.4	104.4							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

90033

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
33 18.5N	118 07.0W	4/ 9/78	1329	GMT	750M	100	13KT	1	100 3 4						
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	16.31	33.124	5.95	0.24	3.	0.03	0.0	367.5	0	16.31	33.124	5.95	24.258	367.5	0.000
10	16.27	33.124	5.97	0.25	3.	0.01	0.0	366.6	10	16.27	33.124	5.97	24.267	366.6	0.037
30	15.07	33.260	6.13	0.27	4.	0.01	0.0	331.2	20	15.91	33.186	6.08	24.395	354.4	0.073
40	15.62	33.319	5.96	0.33	5.	0.15	0.1	297.8	30	15.07	33.260	6.13	24.638	331.2	0.107
48	12.84	33.370	5.49	0.58	6.	0.51	4.1	279.2	50	12.67	33.382	5.36	25.226	275.3	0.168
62	11.81	33.444	4.67	0.88	11.	0.26	10.2	255.0	75	11.26	33.533	4.38	25.608	238.9	0.233
77	11.19	33.547	4.34	1.06	15.	0.06	13.6	236.6	100	10.43	33.795	3.41	25.958	205.7	0.289
95	10.53	33.753	3.54	1.35	22.	0.04	18.1	210.3	125	10.03	33.964	2.88	26.155	186.9	0.338
118	10.18	33.913	3.05	1.68	28.	0.05	23.0	192.7	150	9.77	34.079	2.48	26.292	174.0	0.384
136	9.87	34.032	2.65	1.77	28.	0.02	23.9	178.9	200	9.10	34.118	2.26	26.432	160.6	0.470
164	9.68	34.098	2.38	1.92	31.	0.04	25.5	171.0	250	8.64	34.191	1.76	26.562	148.3	0.549
192	9.17	34.106	2.32	1.98	34.	0.01	27.1	162.5	300	7.96	34.221	1.33	26.689	136.2	0.623
219	8.97	34.149	2.09	2.07	37.	0.03	26.9	156.3	400	6.94	34.				

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

90037

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT	WAVES					
33 11.0N	118 22.5W	4/ 9/78	1742	GMT	1165M	130	6KT	1	270	3 4					
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	16.12	33.251	5.91	0.30	1.	0.02	0.1	354.1	0	16.12	33.251	5.91	24.398	354.1	0.000
10	16.08	33.250	5.94	0.30	1.	0.02	0.0	353.3	10	16.08	33.250	5.94	24.407	353.3	0.035
29	14.56	33.271	6.27	0.32	3.	0.00	0.0	320.0	20	16.00	33.252	6.12	24.426	351.4	0.071
39	15.78	33.286	6.26	0.34	4.	0.03	0.0	303.4	30	14.48	33.275	6.27	24.776	318.1	0.104
49	12.42	33.304	5.49	0.67	7.	0.31	5.8	276.3	50	12.33	33.312	5.43	25.237	274.2	0.164
63	11.46	33.405	4.81	0.94	11.	0.12	10.7	251.8	75	10.99	33.506	4.42	25.635	236.4	0.228
77	10.93	33.521	4.37	1.15	14.	0.01	13.8	234.1	100	10.16	33.708	3.74	25.937	207.7	0.284
96	10.29	33.673	3.85	1.37	18.	0.05	18.1	212.3	125	9.61	33.867	3.20	26.153	187.1	0.334
118	9.68	33.835	3.32	1.63	25.	0.05	22.1	190.5	150	9.36	33.962	2.81	26.269	176.1	0.380
138	9.52	33.911	3.01	1.76	27.	0.02	23.7	182.3	200	8.70	34.125	2.04	26.501	154.1	0.464
165	9.13	34.020	2.55	1.97	32.	0.06	26.2	168.3	250	8.24	34.186	1.57	26.620	142.8	0.540
193	8.78	34.109	2.12	2.11	37.	0.06	28.5	156.4	300	7.84	34.218	1.23	26.705	134.7	0.612
220	8.49	34.154	1.83	2.28	42.	0.02	30.1	148.7	400	7.09	34.261	0.71	26.846	121.3	0.746
256	8.19	34.189	1.53	2.38	46.	0.00	31.4	141.8	500	6.31	34.304	0.42	26.984	108.3	0.867
311	7.75	34.222	1.16	2.55	52.	0.00	33.0	133.2							
381	7.24	34.252	0.79	2.67	60.	0.00	35.5	124.0							
454	6.65	34.284	0.52	2.81	68.	0.13	37.2	113.9							
530	6.11	34.315	0.38	2.98	77.	0.06	40.0	104.9							

RV DAVID STARR JORDAN

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90045

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT	WAVES					
32 54.5N	118 55.5W	4/ 9/78	2338	GMT	1664M	280	15KT	0	280	2 5					
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	15.26	33.296	6.11	0.33	3.	0.01	0.0	332.5	0	15.26	33.296	6.11	24.624	332.5	0.000
10	14.70	33.290	6.16	0.30	2.	0.00	0.0	321.4	10	14.70	33.290	6.16	24.741	321.4	0.033
29	14.59	33.290	6.14	0.29	2.	0.00	0.0	319.2	20	14.64	33.290	6.15	24.754	320.2	0.065
38	13.30	33.371	5.56	0.56	5.	0.20	3.5	287.9	30	14.47	33.301	6.09	24.797	316.1	0.097
48	12.11	33.335	5.13	0.86	8.	0.33	8.4	268.4	50	11.93	33.364	4.99	25.353	263.2	0.155
62	11.12	33.564	4.20	1.22	14.	0.16	14.7	234.2	75	10.66	33.655	3.85	25.810	219.7	0.216
75	10.66	33.655	3.85	1.41	17.	0.06	17.7	219.7	100	10.06	33.786	3.40	26.014	200.3	0.269
94	10.26	33.763	3.44	1.57	21.	0.04	20.1	205.1	125	9.47	33.882	3.12	26.187	183.9	0.317
117	9.56	33.842	3.28	1.75	25.	0.03	22.9	188.1	150	9.10	33.960	2.84	26.309	172.3	0.362
135	9.39	33.925	2.92	1.90	28.	0.01	24.8	179.3	200	8.45	34.066	2.37	26.494	154.7	0.446
162	8.86	33.979	2.81	2.02	32.	0.02	26.5	167.2	250	8.02	34.138	1.80	26.615	143.2	0.522
190	8.56	34.051	2.46	2.16	36.	0.05	28.2	157.4	300	7.67	34.196	1.26	26.711	134.1	0.594
218	8.26	34.086	2.20	2.25	40.	0.01	29.7	150.5	400	6.96	34.264	0.71	26.866	119.5	0.726
254	7.99	34.143	1.75	2.44	46.	0.06	31.4	142.4	500	6.24	34.311	0.40	26.999	106.8	0.846
308	7.62	34.202	1.19	2.65	53.	0.01	33.9	132.8							
377	7.12	34.251	0.81	2.84	62.	0.00	36.1	122.5							
447	6.64	34.286	0.53	2.90	67.		37.7	113.6							
523	6.06	34.320	0.36	3.05	79.		39.7	103.9							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

90053

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT	WAVES					
32 39.0N	119 29.0W	4/ 8/78	1412	GMT	1202M	310	28KT	1	310	8 5					
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	15.05	33.206	5.90	0.48	3.	0.1	334.8	0	15.05	33.206	5.90	24.601	334.8	0.000	
11	15.05	33.203	5.92	0.46	3.	0.02	0.1	335.0	10	15.05	33.205	5.92	24.599	335.0	0.034
29	15.06	33.206	5.89	0.44	3.	0.02	0.1	335.0	20	15.06	33.207	5.91	24.599	335.0	0.067
53	14.88	33.190	5.96	0.45	3.	0.00	0.1	332.4	30	15.05	33.205	5.89	24.600	334.8	0.101
62	13.37	33.116	5.95	0.51	4.	0.06	1.4	307.9	50	14.90	33.194	5.95	24.622	332.8	0.168
72	12.89	33.126	5.85	0.62	5.	0.04	2.3	298.1	75	12.63	33.139	5.78	25.045	292.5	0.246
86	11.62	33.202	5.46	0.84	8.	0.00	6.6	269.5	100	10.70	33.316	4.97	25.540	245.4	0.314
100	10.70	33.316	4.97	1.16	12.	0.00	12.1	245.4	125	9.83	33.672	3.97	25.964	205.0	0.371
123	9.87	33.651	4.03	1.54	20.	0.05	19.0	207.1	150	9.49	33.837	3.45	26.149	187.5	0.421
142	9.58	33.794	3.57	1.71	24.	0.01	21.7	191.9	200	8.73	34.006	2.87	26.403	163.4	0.510
165	9.32	33.896	3.29	1.87	27.	0.05	23.2	180.4	250	8.07	34.122	2.10	26.595	145.2	0.589
193	8.83	33.982	2.99	2.01	32.	0.06	25.5	166.5	300	7.54	34.166	1.58	26.707	134.5	0.661
221	8.46	34.065	2.50	2.23	38.	0.00	28.3	154.9	400	6.83	34.221	0.94	26.849	121.0	0.794
258	7.97	34.132	2.01	2.44	46.	0.00	31.1	142.9	500	6.14	34.295	0.52	26.999	106.8	0.915
314	7.42	34.171	1.46	2.62	54.	0.00	33.1	132.4							
384	6.94	34.208	1.03	2.79	61.	0.00	35.4	123.3							
455	6.45	34.262	0.66	2.91	70.	0.07	37.0	113.0							
530	5.93	34.314	0.46	3.11	80.	0.00	40.4	102.8							

RV DAVID STARR JORDAN

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90060

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES			
32 25.0N	119 57.5W	4/ 8/78	0815	GMT	901M	320	29KT	1	02	SIGT	DT	DD
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02
1	15.25	33.048	5.87	0.38	3.	0.00	0.1	350.5	0	15.25	33.048	5.87
10	15.25	33.048	5.94	0.38	3.	0.02	0.0	350.5	10	15.25	33.048	5.94
29	15.27	33.050	5.88	0.36	3.	0.00	0.1	350.7	20	15.26	33.051	5.92
57	14.72	33.082	5.97	0.37	3.	0.03	0.0	337.1	30	15.25	33.053	5.88
66	13.23	33.080	6.01	0.41	4.	0.08	0.9	307.9	50	14.86	33.076	5.94
80	11.41	33.040	5.74	0.67	6.	0.08	4.9	277.8	75	11.97	33.048	5.87
94	10.60	33.186	5.28	0.90	10.	0.07	9.6	253.3	100	10.32	33.227	5.16
108	10.00	33.277	5.01	1.01	13.	0.06	12.2	236.9	125	9.59	33.464	4.51
132	9.50	33.545	4.28	1.31	19.	0.09	17.7	209.2	150	9.37	33.717	3.80
150	9.37	33.717	3.80	1.52	22.	0.01	20.8	196.4	200	8.42	33.982	2.96
179	8.95	33.905	3.16	1.75	28.	0.01	24.3	174.1	250	7.74	34.097	2.03
207	8.25	33.999	2.89	1.87	34.	0.05	26.6	156.8	300	7.41	34.165	1.38
235	7.85	34.068	2.28	2.11	42.	0.00	29.9	146.0	400	6.75	34.235	0.76
280	7.57	34.141	1.62	2.34	50.	0.00	31.8	136.7	500	6.12	34.273	0.48
331	7.15	34.192	1.08	2.54	57.	0.00	34.7	127.3			26.985	108.2
411	6.67	34.239	0.73	2.71	64.	0.00	37.0	117.5				0.921
491	6.17	34.268	0.50	2.78	72.	0.05	37.7	109.1				
572	5.78	34.313	0.34	2.90	80.		39.6	101.1				

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

90070

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES			
32 04.5N	120 38.3W	4/ 8/78	0153	GMT	3546M	340	25KT	1	330	10	6	
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02
2	15.65	33.130	5.85	0.26	4.	0.01	0.0	352.9	0	15.65	33.130	5.85
11	15.65	33.126	5.88	0.27	3.	0.00	0.0	353.2	10	15.65	33.127	5.88
30	15.68	33.122	5.89	0.26	3.	0.00	0.0	354.1	20	15.66	33.124	5.88
53	14.19	33.158	6.11	0.26	3.	0.01	0.0	320.9	30	15.68	33.122	5.89
62	12.93	33.165	6.00	0.40	5.	0.06	2.1	296.0	50	14.52	33.155	6.09
71	11.83	33.179	5.66	0.64	7.	0.16	5.9	274.9	75	11.55	33.203	5.51
85	11.08	33.265	5.20	0.90	10.	0.10	10.1	255.6	100	10.40	33.340	4.94
99	10.44	33.331	4.96	1.07	12.	0.06	12.8	240.0	125	9.69	33.563	4.29
122	9.74	33.533	4.38	1.34	18.	0.05	17.8	213.8	150	9.32	33.782	3.60
141	9.47	33.709	3.82	1.54	22.	0.09	21.5	196.5	200	8.62	33.985	2.81
164	9.10	33.872	3.30	1.73	27.	0.03	24.7	178.8	250	7.87	34.063	2.34
192	8.73	33.964	2.90	1.93	32.	0.03	27.3	166.4	300	7.30	34.110	1.71
219	8.35	34.022	2.63	2.05	37.	0.03	29.0	156.5	400	6.63	34.211	0.83
256	7.78	34.068	2.28	2.20	43.	0.00	31.3	145.0	500	5.98	34.294	0.41
312	7.20	34.119	1.56	2.51	54.	0.01	35.3	135.4				
382	6.76	34.189	0.98	2.72	63.	0.01	38.0	122.4				
451	6.26	34.265	0.50	2.87	73.	0.08	40.0	110.4				
527	5.85	34.300	0.36	3.03	81.	0.03	42.0	102.9				

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

90080

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES			
31 44.5N	121 19.5W	4/ 7/78	1937	GMT	3546M	290	18KT	1	300	9	7	
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02
1	15.08	33.024	5.92	0.44	3.	0.03	0.1	348.7	0	15.08	33.024	5.92
10	15.08	33.022	5.98	0.45	3.	0.01	0.0	348.9	10	15.08	33.022	5.98
29	15.09	33.027	5.98	0.44	3.	0.00	0.1	348.7	20	15.09	33.025	5.98
53	14.97	33.026	6.00	0.42	3.	0.00	0.1	346.3	30	15.09	33.027	5.98
62	14.23	32.977	6.08	0.44	3.	0.00	0.1	334.9	50	14.99	33.026	6.00
71	12.99	33.008	6.16	0.49	4.	0.03	0.0	308.7	75	12.56	33.017	6.12
85	11.70	33.039	5.89	0.68	6.	0.05	3.4	283.0	100	10.73	33.148	5.35
99	10.78	33.136	5.38	1.03	10.	0.03	9.5	260.0	125	9.82	33.410	4.67
123	9.87	33.387	4.72	1.36	16.	0.01	16.2	226.7	150	9.41	33.683	3.94
142	9.52	33.587	4.21	1.58	20.	0.00	19.7	206.4	200	8.77	33.952	3.10
165	9.22	33.833	3.49	1.94	26.	0.11	23.4	183.5	250	8.13	34.061	2.35
192	8.89	33.921	3.24	1.96	30.	0.08	25.3	172.0	300	7.30	34.065	1.94
221	8.47	34.021	2.72	2.20	36.	0.00	28.5	158.3	400	6.41	34.144	1.02
258	8.03	34.064	2.27	2.41	42.	0.00	31.3	148.8	500	5.83	34.229	0.57
314	7.07	34.063	1.84	2.62	53.	0.00	34.5	135.8				
384	6.52	34.131	1.12	2.90	64.	0.01	38.3	123.7				
454	6.08	34.185	0.75	2.98	72.	0.04	40.5	114.2				
531	5.67	34.260	0.47	3.30	82.	0.01	43.2	103.7				

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

90090

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
31 22.3N	122 01.4W	4/ 7/78	1235	GMT	3926M	300	23KT	1	300	7	6				
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
2	15.10	32.924	5.91	0.31	3.	0.00	0.1	356.4	0	15.10	32.924	5.91	24.374	356.4	0.000
11	15.09	32.924	5.89	0.32	3.	0.05	0.0	356.2	10	15.09	32.924	5.89	24.376	356.2	0.036
31	15.11	32.919	5.92	0.31	3.	0.03	0.0	357.0	20	15.10	32.923	5.90	24.373	356.5	0.071
40	15.08	32.918	5.92	0.32	3.	0.03	0.0	356.5	30	15.11	32.920	5.92	24.369	356.9	0.107
49	14.33	32.901	6.05	0.33	3.	0.02	0.0	342.5	50	14.27	32.910	6.05	24.537	340.8	0.177
60	13.63	33.028	6.11	0.39	3.	0.01	0.0	319.4	75	13.19	33.089	6.02	24.896	306.7	0.258
78	13.02	33.096	5.97	0.45	4.	0.16	1.4	302.8	100	10.37	33.111	5.40	25.437	255.2	0.329
96	10.68	33.090	5.47	0.82	9.	0.04	7.9	261.8	125	9.40	33.301	5.08	25.745	225.9	0.390
120	9.48	33.253	5.14	1.09	14.	0.11	13.3	250.5	150	9.17	33.582	4.54	26.003	201.4	0.444
138	9.31	33.431	4.87	1.29	17.	0.05	15.9	214.7	200	8.68	33.991	2.87	26.399	163.8	0.537
166	8.98	33.770	3.99	1.63	24.	0.05	21.8	184.5	250	7.94	34.089	2.17	26.588	145.8	0.616
193	8.79	33.966	2.96	1.98	32.	0.07	26.6	167.1	300	7.48	34.154	1.55	26.707	134.6	0.689
220	8.35	34.033	2.71	2.11	37.	0.04	29.2	155.7	400	6.61	34.205	0.86	26.866	119.4	0.821
258	7.85	34.100	2.02	2.41	45.	0.02	51.9	143.6	500	5.80	34.251	0.56	27.007	106.0	0.940
313	7.38	34.165	1.44	2.65	54.	0.01	35.4	132.3							
383	6.78	34.201	0.94	2.83	64.	0.00	38.6	121.8							
455	6.11	34.220	0.68	2.94	74.	0.07	40.3	112.0							
532	5.63	34.280	0.49	3.11	83.		42.5	101.8							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

90100

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
31 02.0N	122 42.2W	4/ 7/78	0546	GMT	3738M	330	20KT	1	300	7	6				
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
3	15.44	32.947	5.84	0.39	4.	0.00	0.3	361.8	0	15.44	32.947	5.84	24.317	361.8	0.000
12	15.45	32.945	5.85	0.39	2.	0.02	0.2	362.2	10	15.45	32.945	5.85	24.313	362.2	0.036
31	15.46	32.947	5.88	0.38	2.	0.00	0.2	362.3	20	15.46	32.946	5.86	24.312	362.3	0.072
41	15.46	32.946	5.90	0.37	2.	0.00	0.2	362.3	30	15.46	32.947	5.88	24.313	362.3	0.109
50	15.32	32.927	5.91	0.37	2.	0.00	0.2	360.8	50	15.32	32.927	5.91	24.328	360.8	0.181
64	14.46	32.885	6.01	0.40	3.	0.00	0.2	346.3	75	14.15	32.978	6.04	24.616	333.4	0.269
77	14.09	32.995	6.04	0.40	4.	0.00	0.2	330.8	100	12.54	33.085	6.01	25.021	294.8	0.348
97	12.75	33.088	6.03	0.40	5.	0.00	0.3	298.3	125	10.76	33.093	5.66	25.355	263.0	0.418
120	11.13	33.065	5.75	0.57	8.	0.01	3.7	271.2	150	9.55	33.336	5.01	25.748	225.7	0.480
139	9.87	33.206	5.34	0.90	13.	0.01	9.6	240.1	200	8.94	33.826	3.63	26.229	179.8	0.583
167	9.33	33.537	4.47	1.33	21.	0.02	17.5	207.1	250	8.26	34.023	2.73	26.489	155.2	0.669
194	8.97	33.777	3.82	1.58	25.	0.03	22.0	183.9	300	7.42	34.049	2.26	26.633	141.5	0.745
222	8.80	33.963	3.00	1.82	31.	0.05	24.8	167.5	400	6.60	34.160	1.08	26.832	122.6	0.882
259	8.06	34.027	2.69	2.05	38.	0.02	28.8	152.0	500	5.93	34.260	0.50	26.998	106.9	1.003
315	7.23	34.053	2.09	2.33	49.	0.01	33.0	138.7							
385	6.73	34.144	1.21	2.62	60.	0.02	36.9	125.4							
456	6.17	34.214	0.70	2.76	71.		37.9	113.1							
532	5.81	34.292	0.41	3.00	80.	0.05	40.9	103.0							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

90110

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
30 45.1N	123 19.9W	4/ 6/78	2330	GMT	3738M	300	18KT	2	280	4	6				
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	16.04	33.039	5.79	0.59	3.	0.00	0.0	367.9	0	16.04	33.039	5.79	24.254	367.9	0.000
10	16.04	33.037	5.83	0.57	2.	0.00	0.0	368.0	10	16.04	33.037	5.83	24.252	366.0	0.037
29	16.02	33.037	5.85	0.55	2.	0.00	0.0	367.6	20	16.03	33.037	5.84	24.255	367.8	0.074
39	15.95	33.037	5.88	0.52	2.	0.00	0.0	366.1	30	16.02	33.037	5.85	24.257	367.6	0.110
48	15.79	33.053	5.86	0.50	2.	0.00	0.0	361.5	50	15.76	33.052	5.86	24.324	361.2	0.184
62	15.59	33.026	5.88	0.49	2.	0.00	0.0	359.2	75	14.48	32.938	6.02	24.515	343.0	0.272
76	14.39	32.930	6.03	0.51	2.	0.00	0.0	341.6	100	13.13	33.002	6.06	24.842	311.9	0.354
94	13.63	32.989	6.08	0.58	3.	0.00	0.0	322.3	125	10.99	33.065	5.73	25.292	269.0	0.428
118	11.50	33.043	5.87	0.77	5.	0.04	3.6	279.2	150	9.86	33.230	5.19	25.616	238.2	0.492
136	10.33	33.111	5.47	1.05	10.	0.02	8.7	254.5	200	8.90	33.778	4.09	26.199	182.8	0.599
164	9.57	33.377	4.90	1.34	15.	0.02	13.8	222.7	250	8.20	33.986	3.27	26.469	157.1	0.686
191	9.04	33.704	4.25	1.59	22.	0.02	18.9	190.3	300	7.26	34.019	2.55	26.631	141.8	0.763
219	8.62	33.888	3.78	1.76	27.	0.01	22.2	170.4	400	6.53	34.122	1.17	26.839	122.0	0.900
256	8.11	33.994	3.17	2.09	35.	0.02	26.1	155.2	500	5.82	34.226	0.56	26.985	108.1	1.021
311	7.06	34.018	2.40	2.36	48.	0.02	30.0	139.0							
380	6.42	34.095	1.58	2.73	61.	0.02	35.0	125.1							
449	6.13	34.181	0.78	2.89	71.	0.05	36.9	115.1							
526	5.63	34.242	0.53	3.08	80.	0.04	40.1	104.6							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

90120

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
30 25.1N	123 59.9W	4/ 6/78	1740	GMT	4117M	240	19KT	1	280 4 5						
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	16.43	33.055		0.38	2.	0.01	0.0	375.1	0	16.43	33.055		24.178	375.1	0.000
11	16.41	33.054		0.35	2.	0.01	0.0	374.8	10	16.41	33.056		24.181	374.8	0.038
29	16.41	33.051		0.36	2.	0.00	0.0	375.0	20	16.41	33.055		24.180	374.9	0.075
39	16.28	33.040		0.35	2.	0.00	0.0	373.0	30	16.40	33.052		24.180	374.9	0.113
48	16.10	33.039		0.34	2.	0.00	0.0	369.1	50	16.08	33.046		24.247	368.5	0.187
62	15.98	33.074		0.34	2.	0.00	0.0	364.0	75	15.66	33.087		24.373	356.5	0.278
77	15.56	33.085		0.34	3.	0.00	0.0	354.3	100	13.01	33.091		24.933	303.1	0.361
94	15.47	33.101		0.43	3.	0.00	0.0	311.0	125	11.42	33.074		25.222	275.7	0.434
118	11.92	33.058		0.60	5.	0.01	2.7	285.4	150	10.01	33.283		25.632	236.7	0.499
136	10.69	33.127		0.80	9.	0.02	7.0	259.2	200	8.97	33.789		26.196	183.1	0.606
164	9.53	33.459		1.27	17.	0.04	15.9	216.0	250	8.15	33.980		26.471	156.9	0.693
192	9.12	33.727		1.55	24.	0.02	20.7	189.8	300	7.28	34.007		26.620	142.8	0.770
220	8.58	33.903		1.79	30.	0.02	23.9	168.7	400	6.14	34.081		26.831	122.7	0.908
258	8.04	33.986		1.95	35.	0.01	25.9	154.8	500	5.46	34.182		26.995	107.2	1.028
314	7.03	34.008		2.29	52.	0.00	31.1	139.4							
384	6.27	34.066		2.66	63.	0.01	36.4	125.4							
456	5.74	34.134		2.88	75.	0.04	38.7	114.0							
531	5.28	34.216		3.08	86.	0.13	40.1	102.6							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

90130

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
30 04.1N	124 37.8W	4/ 6/78	1126	GMT	4309M	250	7KT	2							
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
0	16.51	33.075	5.73	0.41	3.	0.01	0.0	375.4	0	16.51	33.075	5.73	24.174	375.4	0.000
10	16.51	33.073	5.76	0.41	2.	0.02	0.0	375.6	10	16.51	33.073	5.76	24.173	375.6	0.038
29	16.46	33.065	5.77	0.41	2.	0.00	0.0	375.1	20	16.48	33.071	5.77	24.176	375.3	0.075
40	16.36	33.058	5.84	0.41	2.	0.00	0.0	373.4	30	16.46	33.067	5.78	24.179	375.0	0.113
48	16.16	33.059	5.84	0.56	2.	0.01	0.0	369.0	50	16.12	33.061	5.85	24.251	368.1	0.187
63	15.90	33.056	5.89	0.49	2.	0.01	0.0	363.6	75	15.70	33.052	5.85	24.337	359.9	0.279
77	15.67	33.048	5.85	0.46	2.	0.01	0.0	359.3	100	13.23	33.101	6.05	24.898	306.5	0.363
96	13.57	33.101	6.08	0.47	3.	0.02	0.0	312.9	125	11.30	33.111	5.66	25.272	270.9	0.435
119	11.79	33.092	5.76	0.69	5.	0.06	3.3	280.6	150	9.93	33.264	5.15	25.630	236.8	0.500
138	10.37	33.173	5.41	0.96	9.	0.04	8.8	250.5	200	9.05	33.779	3.98	26.175	185.0	0.607
166	9.60	33.409	4.77	1.32	15.	0.04	14.9	220.8	250	8.28	33.975	3.08	26.949	159.1	0.695
194	9.13	33.733	4.12	1.56	21.	0.02	19.4	189.5	300	7.60	34.019	2.71	26.583	146.3	0.773
222	8.75	33.892	3.52	1.83	27.	0.04	23.5	172.0	400	6.14	34.058	1.55	26.812	124.5	0.914
258	8.14	33.987	2.98	2.06	34.	0.01	26.8	156.1	500	5.40	34.160	0.76	26.984	108.2	1.036
314	7.43	34.018	2.64	2.27	42.	0.01	30.0	144.0							
382	6.34	34.042	1.78	2.63	58.	0.00	35.6	128.1							
452	5.71	34.110	1.01	2.87	71.		37.8	115.4							
528	5.27	34.188	0.72	3.02	82.		40.0	104.6							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

90140

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
29 45.1N	125 19.6W	4/ 6/78	0540	GMT	4213M	280	6KT	1							
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	16.61	33.045	5.72	0.34	3.	0.00	0.0	379.8	0	16.61	33.045	5.72	24.129	379.8	0.000
11	16.41	33.039	5.75	0.32	3.	0.00	0.0	375.9	10	16.43	33.042	5.75	24.167	376.2	0.038
30	16.30	33.040	5.76	0.30	3.	0.00	0.0	373.4	20	16.36	33.042	5.75	24.182	374.7	0.075
38	16.45	33.176	5.81	0.28	4.	0.01	0.0	366.7	30	16.30	33.040	5.76	24.196	373.4	0.113
49A	16.15	33.095	5.81	0.29	5.	0.01	0.0	366.1	50	16.09	33.088	5.81	24.280	365.4	0.187
63	15.99	33.096	5.79	0.31	5.	0.00	0.0	362.6	75	16.00	33.200	5.80	24.386	355.2	0.278
77A	15.78	33.165	5.80	0.28	2.	0.01	0.0	353.1	100	15.06	33.413	5.81	24.755	320.1	0.363
94	15.69	33.448	5.81	0.26	3.	0.01	0.0	330.5	125	12.70	33.288	5.71	25.147	282.8	0.439
118	13.01	33.262	5.79	0.47	5.	0.04	1.9	290.4	150	11.82	33.414	5.45	25.412	257.6	0.507
137	12.35	33.354	5.56	0.54	6.	0.03	3.6	271.4	200	9.90	33.620	4.87	25.914	209.9	0.626
164	11.26	33.473	5.33	0.64	8.	0.01	6.1	243.3	250	8.73	33.982	4.21	26.385	165.1	0.722
193	10.31	33.590	5.01	0.90	12.	0.02	10.7	218.7	300	7.86	33.991	3.78	26.524	151.9	0.803
221	9.26	33.890	4.47	1.23	20.	0.05	16.9	179.9	400	6.55	34.021	2.03	26.730	132.3	0.951
259	8.60	33.974	4.15	1.56	27.	0.01	21.1	163.7	500	5.62	34.129	0.91	26.933	113.1	1.079
315	7.60	33.988	3.61	1.88	37.	0.03	24.9	148.5							
385	6.73	34.010	2.25	2.25	53.	0.00	31.5	135.4							
455	5.95	34.070	1.35	2.66	68.	0.02	36.4	121.3							
530	5.48	34.174	0.67	3.02	81.	0.07	40.7	108.0							

A) THE STANDARD DEPTH VALUES BETWEEN THESE TWO OBSERVED DEPTHS, WERE DETERMINED FROM COMPARISON WITH THE CTD ANALOG FOR THIS STATION.

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

90150

LATITUDE 29 23.0N	LONGITUDE 125 59.8W	MO/DAY/YR 4/ 5/78	MESSENDER 2305	TIME GMT	BOTTOM 4314M	WIND 020	SPEED 10KT	WEATHER 1	DOMINANT WAVES 010 5 8						
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
0	17.28	33.358	5.68	0.33	1.	0.01	0.3	371.9	0	17.28	33.358	5.68	24.211	371.9	0.000
10	17.04	33.348	5.70	0.30	0.	0.00	0.3	367.3	10	17.04	33.348	5.70	24.260	367.3	0.037
38	17.06	33.378	5.72	0.27	0.	0.01	0.3	365.5	20	17.05	33.361	5.71	24.266	366.7	0.074
61	17.13	33.470	5.69	0.27	0.	0.01	0.3	360.4	30	17.05	33.371	5.71	24.273	366.0	0.110
80	17.15	33.570	5.67	0.23	0.	0.00	0.2	353.6	50	17.10	33.422	5.71	24.302	363.3	0.184
94	16.62	33.593	5.71	0.22	0.	0.00	0.2	340.1	75	17.14	33.535	5.68	24.377	356.1	0.274
108	15.25	33.482	5.84	0.23	1.	0.00	0.2	318.7	100	16.07	33.551	5.77	24.637	331.3	0.361
127	13.64	33.410	5.68	0.38	2.	0.04	1.3	291.6	125	13.81	33.418	5.71	25.026	294.3	0.440
145	12.00	33.334	5.52	0.54	4.	0.02	4.5	266.5	150	11.57	33.349	5.43	25.407	258.0	0.509
169	10.32	33.466	5.03	0.84	10.	0.03	10.8	228.0	200	9.75	33.713	4.56	26.014	200.4	0.626
192	9.91	33.657	4.61	1.06	13.	0.05	14.6	207.3	250	8.53	33.945	3.87	26.386	165.0	0.719
216	9.34	33.806	4.46	1.26	18.	0.02	17.7	187.3	300	7.46	34.000	3.18	26.589	145.7	0.799
244	8.69	33.928	3.94	1.50	24.	0.07	21.7	168.5	400	6.38	34.056	1.64	26.780	127.6	0.941
277	7.86	33.989	3.59	1.71	33.	0.02	25.3	152.0	500	5.67	34.147	0.82	26.941	112.3	1.067
324	7.13	34.000	2.72	2.08	44.	0.01	30.5	141.3							
385	6.50	34.043	1.80	2.39	55.	0.00	35.3	130.0							
455	5.99	34.102	1.15	2.64	66.	0.09	37.9	119.4							
530	5.47	34.178	0.64	2.87	79.	0.10	40.0	107.6							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

90160

LATITUDE 29 05.1N	LONGITUDE 126 38.8W	MO/DAY/YR 4/ 5/78	MESSENDER 1630	TIME GMT	BOTTOM 4314M	WIND 010	SPEED 10KT	WEATHER 1	DOMINANT WAVES 340 6 5						
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
1	17.11	33.409	0.39	0.	0.00	0.1	364.4	0	17.11	33.409	24.290	364.4	0.000		
10	17.07	33.413	0.35	0.	0.00	0.1	363.2	10	17.07	33.413	24.302	363.2	0.036		
39	17.06	33.408	0.54U	0.	0.00	0.1	363.3	20	17.07	33.413	24.302	363.3	0.073		
62	17.04	33.408	0.35	0.	0.00	0.1	362.9	30	17.06	33.412	24.302	363.3	0.109		
81	16.97	33.457	0.32	0.	0.00	0.0	357.8	50	17.05	33.410	24.303	363.1	0.182		
95	15.85	33.442	0.31	0.	0.00	0.0	334.3	75	16.99	33.443	24.343	359.4	0.273		
109	15.30	33.444	0.30	1.	0.00	0.0	322.6	100	15.64	33.444	24.653	329.8	0.360		
129	14.01	33.463	0.32	1.	0.03	0.6	294.9	125	14.29	33.461	24.957	300.8	0.439		
146	12.87	33.452	0.43	3.	0.06	2.5	273.8	150	12.66	33.454	25.283	269.8	0.511		
170	11.75	33.480	0.57	5.	0.01	5.5	251.3	200	10.47	33.632	25.825	218.3	0.635		
193	10.79	33.579	0.77	8.	0.01	9.4	227.5	250	8.66	33.939	26.362	167.3	0.734		
216	9.75	33.756	1.10	15.	0.00	15.9	197.4	300	7.72	33.999	26.549	149.5	0.816		
245	8.77	33.924	1.44	24.	0.00	22.3	170.0	400	6.37	34.070	26.792	126.5	0.959		
277	8.18	33.978	1.73	31.	0.00	25.2	157.4	500	5.70	34.167	26.954	111.1	1.084		
324	7.27	34.011	2.03	43.	0.00	30.3	142.3								
384	6.50	34.053	2.43	56.	0.00	35.3	129.3								
454	6.03	34.124	2.61	68.	0.08	36.7	118.2								
530	5.47	34.191	2.78	78.	0.09	39.2	106.6								

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

90170

LATITUDE 28 45.1N	LONGITUDE 127 17.3W	MO/DAY/YR 4/ 5/78	MESSENDER 1058	TIME GMT	BOTTOM 4314M	WIND 040	SPEED 14KT	WEATHER 1	DOMINANT WAVES						
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
0	17.47	33.532	5.63	0.36	1.	0.00	0.1	363.6	0	17.47	33.532	5.63	24.298	363.6	0.000
9	17.44	33.530	5.63	0.34	1.	0.00	0.1	363.1	10	17.44	33.537	5.63	24.308	362.7	0.036
28	17.42	33.624	5.65	0.34	1.	0.03	0.0	355.7	20	17.45	33.537	5.64	24.347	358.9	0.072
38	17.38	33.626	5.67	0.30	1.	0.00	0.0	354.7	30	17.41	33.626	5.65	24.383	355.5	0.108
47	17.51	33.705	5.72	0.30	1.	0.00	0.0	351.9	50	17.51	33.717	5.70	24.430	351.0	0.179
61	17.50	33.760	5.62	0.27	1.	0.00	0.0	347.7	75	17.42	33.814	5.60	24.526	341.9	0.266
75	17.42	33.814	5.60	0.25	1.	0.00	0.0	341.9	100	17.50	33.882	5.59	24.559	338.8	0.352
94	17.50	33.879	5.59	0.21	1.	0.01	0.0	339.0	125	16.81	33.928	5.59	24.756	319.9	0.435
117	17.16	33.928	5.60	0.20	1.	0.02	0.0	327.7	150	15.28	33.853	5.52	25.047	292.2	0.513
136	16.20	33.907	5.58	0.20	1.	0.01	0.0	307.9	200	11.80	33.648	5.25	25.598	239.9	0.648
164	14.27	33.784	5.45	0.28	2.	0.08	1.4	276.6	250	9.68	33.843	4.69	26.123	190.0	0.758
193	12.22	33.650	5.31	0.49	5.	0.03	5.1	247.2	300	8.34	33.983	4.11	26.445	159.4	0.848
221	10.70	33.684	5.05	0.68	9.	0.10	8.3	218.2	400	6.42	34.001	2.21	26.731	132.3	0.999
258	9.46	33.888	4.58	1.04	16.	0.04	15.2	183.1	500	5.48	34.098	1.02	26.926	113.7	1.128
314	8.02	33.991	3.93	1.54	30.	0.01	23.4	154.1							
385	6.64	33.990	2.47	2.15	50.	0.00	32.2	135.7							
455	5.80	34.048	1.44	2.97	67.		36.4	121.1							
530	5.36	34.133	0.84	2.70	78.		38.1	109.7							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

90180

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT	WAVES					
28 25.1N	127 57.4W	4/ 5/78	0427	GMT	4508M	030	15KT	1	020	2 5					
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
1	17.42	33.532	5.66	0.31	0.	0.01	0.0	362.4	0	17.42	33.532	5.66	24.310	362.4	0.000
11A	17.39	33.537	5.66	0.24	0.	0.00	0.0	361.4	10	17.39	33.537	5.66	24.320	361.6	0.036
41A	17.70	33.897	5.67	0.19	0.	0.00	0.0	342.3	20	17.30	33.540	5.66	24.345	359.1	0.072
65	17.69	33.925	5.61	0.27	1.	0.00	0.0	340.0	30	17.46	33.700	5.67	24.428	351.3	0.108
82	17.74	33.964	5.55		5.	0.05	0.0	338.3	50	17.70	33.909	5.65	24.531	341.4	0.177
97	17.71	33.971	5.60	0.24	1.	0.01	0.0	337.1	75	17.72	33.950	5.57	24.556	339.0	0.263
111	17.62	33.972	5.54	0.20	0.	0.01	0.0	335.0	100	17.69	33.972	5.59	24.581	336.7	0.346
130	16.46	33.931	5.54	0.19	1.	0.01	0.0	311.9	125	16.81	33.943	5.54	24.767	318.9	0.431
150	15.51	33.915	5.43	0.32	1.	0.02	0.8	292.5	150	15.51	33.915	5.43	25.044	292.5	0.508
172	13.86	33.795	5.33	0.36	3.	0.02	2.3	267.6	200	11.57	33.719	5.13	25.695	230.7	0.641
196	11.84	33.712	5.17	0.56	5.	0.00	6.1	235.8	250	9.57	33.915	4.57	26.198	182.8	0.747
220	10.49	33.782	4.90	0.84	10.	0.00	11.0	207.5	300	8.28	34.004	4.00	26.470	157.0	0.835
248	9.63	33.907	4.60	1.15	16.	0.00	15.8	184.4	400	6.67	34.007	2.47	26.703	134.9	0.986
280	8.69	33.989	4.14	1.45	24.	0.01	20.2	163.9	500	5.76	34.090	1.21	26.885	117.6	1.119
326	7.85	33.999	3.80	1.71	32.	0.01	23.4	151.1							
385	6.87	33.997	2.74	2.14	46.	0.02	29.4	138.1							
456	6.09	34.053	1.61	2.60	62.	0.01	35.5	124.2							
532	5.60	34.114	1.06	3.00	73.	0.04	39.9	113.9							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

90190

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT	WAVES					
28 05.1N	128 36.5W	4/ 4/78	2223	GMT	4698M	350	10KT	1	360	4 5					
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
0	18.14	33.854	5.58	0.25	1.	0.00	0.1	355.6	0	18.14	33.854	5.58	24.382	355.6	0.000
10	17.82	33.840	5.59	0.20	1.	0.04	0.1	349.2	10	17.82	33.840	5.59	24.449	349.2	0.035
38	17.86	33.880	5.60	0.16	1.	0.04	0.1	347.2	20	17.83	33.856	5.59	24.457	348.5	0.070
60	18.16	34.057	5.59	0.15	1.	0.02	0.1	341.3	30	17.85	33.870	5.60	24.464	347.8	0.105
80	18.26	34.115	5.52	0.11	1.	0.02	0.0	339.5	50	18.02	33.977	5.59	24.504	344.0	0.175
94	18.26	34.153	5.49	0.13	1.	0.02	0.0	336.7	75	18.25	34.107	5.54	24.547	339.9	0.261
108	18.26	34.210	5.48	0.08	1.	0.02	0.0	332.6	100	18.26	34.175	5.49	24.596	335.2	0.346
127	17.69	34.161	5.51	0.05	1.	0.02	0.0	322.8	125	17.77	34.170	5.51	24.713	324.1	0.429
145	17.03	34.135	5.50	0.08	1.	0.01	0.0	309.7	150	16.82	34.119	5.49	24.900	306.2	0.509
169	15.74	34.010	5.43	0.12	2.	0.06	0.6	290.5	200	12.78	33.778	5.22	25.509	248.3	0.650
192	13.58	33.811	5.22	0.32	3.	0.04	3.2	261.0	250	9.98	33.812	4.82	26.048	197.1	0.764
216	11.38	33.752	5.20	0.58	7.	0.03	7.1	224.8	300	8.80	33.986	4.17	26.377	165.8	0.857
244	10.18	33.783	4.88	0.87	12.	0.02	12.6	202.3	400	7.01	34.049	2.24	26.690	136.1	1.014
277	9.26	33.943	4.50	1.22	19.	0.05	17.4	175.9	500	6.18	34.161	1.05	26.888	117.3	1.147
323	8.39	33.999	3.79	1.57	29.	0.01	23.1	158.8							
384	7.22	34.041	2.45	2.14	46.	0.01	30.5	159.4							
455	6.48	34.088	1.64	2.40	57.		35.5	126.4							
530	6.06	34.226	0.62	2.80	71.		37.9	110.9							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

90200

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT	WAVES					
27 45.1N	129 15.5W	4/ 4/78	1627	GMT	4218M	290	7KT	1	340	5 5					
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
1	18.15	34.068	5.19U	0.35	0.	0.1	0.1	340.3	0	18.15	34.068	5.60	24.542	340.3	0.000
10	18.14	34.061	5.43	0.32	0.	0.1	0.1	340.6	10	18.14	34.061	5.43	24.540	340.6	0.034
39	18.15	34.065	5.51	0.29	0.	0.1	0.1	340.5	20	18.15	34.064	5.46	24.540	340.6	0.068
63	18.08	34.059	5.50	0.29	0.	0.1	0.1	339.3	30	18.15	34.066	5.49	24.540	340.5	0.102
81	18.19	34.140	5.25	0.27	0.	0.1	0.1	336.0	50	18.11	34.056	5.51	24.543	340.3	0.171
96	18.39	34.294	5.43	0.24	0.	0.1	0.1	329.5	75	18.14	34.104	5.32	24.572	337.5	0.256
110	18.29	34.299	5.44	0.21	0.	0.1	0.1	326.8	100	18.36	34.294	5.43	24.662	326.9	0.340
128	17.47	34.211	5.28	0.21	0.	0.1	0.1	314.1	125	17.63	34.230	5.30	24.791	316.6	0.421
147	16.59	34.135	5.40	0.20	1.	0.1	0.1	299.9	150	16.24	34.094	5.38	25.016	295.2	0.499
170	13.84	33.859	5.17	0.30	3.	2.2	2.2	262.5	200	12.17	33.821	4.79	25.661	233.9	0.634
193	12.70	33.850	4.98	0.52	4.	5.5	241.3	250	9.74	33.915	3.85	26.169	185.6	0.741	
217	10.94	33.772	4.30	0.89	9.	11.5	215.7	300	8.35	34.006	3.23	26.462	157.8	0.829	
244	9.94	33.892	3.97	1.11	15.	14.7	190.4	400	6.65	34.017	2.28	26.714	133.9	0.981	
277	8.92	33.986	3.35	1.39	23.	19.2	167.6	500	5.50	34.097	1.16	26.923	114.0	1.111	
323	7.86	34.005	3.18	1.86	34.	25.9	150.8								
384	6.88	34.010	2.50	2.29	48.	28.4	137.3								
455	5.95	34.052	1.58	2.49	65.	34.3	122.6								
531	5.25	34.134	0.95	2.74	79.	36.7	108.4								

a) THE STANDARD DEPTH VALUES BETWEEN THESE TWO OBSERVED DEPTHS, WERE DETERMINED FROM COMPARISON WITH THE CTD ANALOG FOR THIS STATION.

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

93029

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
32 52.6N	117 26.6W	3/30/78	0833	GMT	593M	160	9KT	1							
Z	T	S	O2	P04	SI03	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
0	16.96	33.085	5.93	0.14	5.	0.00	0.0	384.7	0	16.96	33.085	5.93	24.078	384.7	0.000
10	16.63	33.078	6.00	0.11	5.	0.01	0.0	377.9	10	16.63	33.078	6.00	24.149	377.9	0.038
29	14.18	33.289	5.61	0.21	6.	0.15	0.5	311.0	20	15.43	33.176	5.86	24.493	345.0	0.074
43	15.00	33.361	5.14	0.47	9.	0.11	6.4	282.9	30	14.09	33.297	5.58	24.873	308.9	0.107
53	11.90	33.434	4.75	0.68	12.	0.14	9.9	258.1	50	12.24	33.412	4.87	25.331	265.3	0.165
67	11.33	33.551	4.28	0.90	15.	0.08	13.3	258.7	75	11.13	33.600	4.07	25.683	231.8	0.227
81	11.02	33.630	3.93	0.99	17.	0.06	15.6	227.6	100	10.61	33.750	3.48	25.892	211.9	0.283
95	10.74	33.707	3.62	1.19	20.	0.06	17.4	217.2	125	9.98	33.935	2.87	26.145	187.9	0.334
119	10.11	33.904	2.97	1.50	25.	0.03	21.8	192.2	150	9.66	34.050	2.50	26.289	174.2	0.380
137	9.76	33.984	2.70	1.66	28.	0.05	23.7	180.7	200	9.88	34.159	2.04	26.468	157.2	0.464
165	9.55	34.110	2.29	1.83	32.	0.02	25.6	168.1	250	8.51	34.202	1.61	26.590	145.6	0.542
193	9.03	34.127	2.10	1.82	37.	0.03	27.3	158.8	300	7.99	34.226	1.22	26.688	136.3	0.615
221	8.85	34.172	1.86	2.06	59.	0.02	28.5	152.7	400	7.05	34.263	0.70	26.852	120.7	0.749
259	8.40	34.207	1.54	2.27	44.	0.01	30.3	143.5	500	6.32	34.310	0.31	26.988	107.8	0.870
315	7.85	34.229	1.12	2.45	51.	0.04	32.6	134.0							
366	7.36	34.248	0.84	2.58	57.	0.04	34.6	125.9							
423	6.86	34.273	0.61	2.65	65.	0.02	36.4	117.4							
481	6.44	34.302	0.38	2.86	72.		37.9	109.9							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

93030

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
32 50.5N	117 31.0W	3/30/78	1112	GMT	815M	130	14KT	1							
Z	T	S	O2	P04	SI03	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
0	16.81	33.088	5.89	2.	0.00	0.0	381.1	0	16.81	33.088	5.89	24.115	381.1	0.000	
10	16.14	33.107	6.01	2.	0.00	0.0	365.0	10	16.14	33.107	6.01	24.283	365.0	0.037	
29	15.10	33.233	5.96	2.	0.01	0.0	333.8	20	15.60	33.173	5.98	24.454	348.8	0.073	
39	14.40	33.272	5.50	3.	0.26	0.4	316.7	30	15.04	33.239	5.92	24.627	332.3	0.107	
48	13.50	33.324	5.30	5.	0.20	4.8	295.2	50	13.33	33.333	5.26	25.056	291.4	0.170	
62	12.41	33.387 A	4.93	8.	0.21	8.0	270.0	75	11.43	33.534	4.26	25.578	241.8	0.237	
77	11.29	33.557	4.15	13.	0.05	14.0	237.6	100	10.46	33.756	3.50	25.923	208.9	0.294	
95	10.53	33.716	3.65	19.	0.02	18.2	213.0	125	10.15	33.922	2.95	26.105	191.6	0.344	
119	10.28	33.883	3.02	24.	0.02	21.2	196.6	150	9.69	34.053	2.59	26.285	174.5	0.391	
137	9.88	33.990	2.82	28.	0.01	23.5	182.2	200	9.26	34.178	1.97	26.454	158.5	0.476	
165	9.53	34.107	2.33	32.	0.02	25.8	168.0	250	8.76	34.231	1.55	26.574	147.1	0.554	
193	9.32	34.163	2.05	34.	0.01	27.1	160.6	300	8.29	34.251	1.22	26.664	138.6	0.628	
220	9.06	34.211	1.76	38.	0.01	28.4	153.0	400	7.18	34.254	0.79	26.827	123.1	0.765	
257	8.69	34.231	1.51	41.	0.00	29.9	146.0	500	6.52	34.291	0.50	26.946	111.8	0.889	
312	8.17	34.254	1.15	49.	0.01	31.9	136.7								
383	7.32	34.248	0.84	58.	0.00	35.0	125.3								
455	6.80	34.274	0.63	63.	0.00	36.8	116.6								
531	6.35	34.301	0.41	75.	0.00	38.4	108.9								

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

93040

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
32 30.0N	118 11.5W	3/30/78	1954	GMT	1757M	110	16KT	2	140 3 4						
Z	T	S	O2	P04	SI03	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	15.94	33.288	5.87	0.63	3.	0.01	0.0	347.5	0	15.94	33.288	5.87	24.467	347.5	0.000
10	15.94	33.287	5.89	0.53	2.	0.00	0.0	347.6	10	15.94	33.287	5.89	24.466	347.6	0.035
29	14.61	33.279	6.02	0.43	2.	0.01	0.0	320.4	20	15.38	33.281	5.96	24.585	336.3	0.069
38	13.82	33.295	5.85	0.55	3.	0.21	0.9	303.5	30	14.55	33.282	6.02	24.766	319.1	0.102
47	12.11	33.342	5.17	0.86	10.	0.26	6.5	267.9	50	11.83	33.368	5.02	25.375	261.1	0.160
61	11.25	33.448	4.66	1.08	14.	0.07	12.0	245.0	75	10.57	33.526	4.38	25.726	227.7	0.222
75	10.57	33.526	4.34	1.46	17.	0.05	15.4	227.7	100	10.12	33.709	3.75	25.944	207.0	0.276
93	10.21	33.653	3.94	1.44	20.	0.03	18.0	212.4	125	9.82	33.877	3.13	26.126	189.7	0.326
116	9.95	33.825	3.32	1.73	25.	0.01	21.4	195.5	150	9.46	34.007	2.65	26.287	174.3	0.373
135	9.67	33.926	2.94		31.	0.12		183.6	200	8.81	34.119	2.15	26.479	156.1	0.457
162	9.29	34.058	2.46	1.75	34.	0.03	26.4	167.9	250	8.32	34.175	1.65	26.600	144.7	0.534
190	8.92	34.104	2.22	1.87	39.	0.01	28.0	158.8	300	7.89	34.219	1.25	26.698	135.4	0.607
217	8.63	34.138	2.01	2.42	41.	0.01	29.3	152.0	400	7.10	34.265	0.73	26.847	121.2	0.741
254	8.28	34.178	1.61	2.73	46.	0.00	31.1	143.9	500	6.31	34.300	0.37	26.981	108.5	0.862
309	7.82	34.225	1.19	2.48	53.	0.00	33.4	133.9							
379	7.31	34.254	0.84	2.97	60.	0.00	35.5	124.8							
450	6.62	34.286	0.508	2.83	71.	0.00	38.1	113.4							
527	6.20	34.302	0.34	2.98	79.	0.01	39.3	106.9							

A) ALTERNATE VALUE: 33.42 PPT.

B) NO OXYGEN SAMPLE WAS DRAWN FOR THIS LEVEL. THE VALUE LISTED, GOOD TO .05 ML/L, IS THAT SUGGESTED BY COMPARISON OF THE DISCRETE DATA FOR THIS STATION WITH THE CTDO RECORDING.

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

93050

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
32 10.0N	118 53.0W	3/31/78	0631	GMT	1387M	150	22KT	5							
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
2	15.84	33.145	5.80	0.42	3.	0.06	0.1	355.8	0	15.84	33.145	5.80	24.380	355.8	0.000
11	15.81	33.144	5.81	0.31	3.	0.06	0.1	355.3	10	15.81	33.146	5.81	24.385	355.4	0.036
30	15.68	33.172	5.85	0.20	3.	0.01	0.1	350.5	20	15.75	33.160	5.85	24.410	353.0	0.071
41	14.98	33.201	5.95	0.25	3.	0.00	0.1	333.7	30	15.68	33.172	5.85	24.437	350.5	0.106
50	14.85	33.216	5.96	0.25	2.	0.01	0.1	329.9	50	14.85	33.216	5.96	24.652	329.9	0.175
64	13.96	33.248	5.73	0.35	3.	0.36	1.4	309.3	75	13.07	33.277	5.49	25.066	290.5	0.252
78	12.83	33.282	5.42	0.53	6.	0.31	5.1	285.5	100	11.52	33.335	5.00	25.407	258.0	0.322
97	11.70	33.311	5.10	0.60	9.	0.11	8.9	262.9	125	10.34	33.593	4.13	25.817	219.1	0.382
120	10.48	33.534	4.29	0.97	16.	0.04	15.6	225.6	150	9.70	33.829	3.41	26.109	191.3	0.434
139	10.02	33.742	3.71	1.16	20.	0.02	19.4	202.8	200	8.87	34.037	2.57	26.406	163.1	0.524
167	9.25	33.927	3.02	1.71	28.	0.00	24.1	177.0	250	8.15	34.086	2.30	26.554	149.0	0.604
195	8.94	34.027	2.60	1.82	33.	0.00	26.3	164.9	300	7.86	34.181	1.52	26.672	137.8	0.678
223	8.52	34.063	2.48	2.04	37.	0.01	28.0	155.9	400	7.05	34.259	0.75	26.849	121.1	0.813
260	8.04	34.094	2.20	2.21	43.	0.01	30.0	146.7	500	6.33	34.294	0.46	26.974	109.3	0.935
317	7.81	34.217	1.22	2.45	52.	0.01	33.3	134.4							
386	7.16	34.253	0.80	2.79	61.	0.03	36.1	122.8							
456	6.66	34.275	0.59	2.98	69.	0.02	38.0	114.7							
533	6.08	34.308	0.36	3.11	78.	0.00	40.3	105.0							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

93060

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
31 50.4N	119 33.7W	3/31/78	1552	GMT	1856M	180	17KT	1	220 5 6						
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
1	15.92	33.153	5.77	0.37	2.	0.00	0.0	356.9	0	15.92	33.153	5.77	24.368	356.9	0.000
10	15.90	33.152	5.76	0.31	2.	0.00	0.0	356.6	10	15.90	33.152	5.76	24.372	356.6	0.036
29	15.91	33.158	5.81	0.30	2.	0.00	0.0	356.4	20	15.91	33.157	5.78	24.373	356.5	0.071
38	15.54	33.171	5.86	0.27	2.	0.00	0.0	347.6	30	15.87	33.162	5.82	24.385	355.4	0.107
48	15.45	33.175	5.88	0.24	2.	0.00	0.0	345.4	50	15.39	33.173	5.88	24.501	344.3	0.177
62	15.03	33.168	5.87	0.26	2.	0.00	0.0	337.1	75	13.35	33.128	5.91	24.694	306.9	0.259
76	13.21	33.124	5.91	0.33	3.	0.05	0.9	304.3	100	11.48	33.181	5.47	25.294	268.8	0.332
95	11.82	33.144	5.61	0.51	6.	0.07	5.5	277.3	125	10.49	33.402	4.80	25.643	235.6	0.395
118	10.58	33.340	4.94	0.78	11.	0.03	12.0	241.6	150	10.17	33.584	4.41	25.838	217.0	0.452
137	10.42	33.497	4.60	0.95	13.	0.02	14.1	227.4	200	9.01	33.876	3.56	26.257	177.2	0.553
165	9.82	33.672	4.20	1.19	17.	0.01	17.7	204.8	250	8.14	34.007	2.72	26.494	154.7	0.638
193	9.15	33.844	3.72	1.47	24.	0.00	21.8	181.6	300	7.50	34.059	2.20	26.629	142.0	0.714
221	8.63	33.945	3.11	1.64	30.	0.00	25.6	166.3	400	6.66	34.166	1.08	26.829	122.9	0.852
259	8.00	34.018	2.63	1.94	39.	0.00	28.9	151.8	500	6.17	34.291	0.47	26.993	107.5	0.974
315	7.35	34.068	2.05	2.15	49.	0.00	32.5	139.2							
386	6.73	34.145	1.20	2.33	61.	0.00	36.8	125.3							
456	6.42	34.242	0.69	2.74	69.	0.00	38.7	114.1							
532	5.96	34.319	0.35	2.91	79.	0.00	40.5	102.8							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

93070

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
31 30.0N	120 14.0W	4/ 1/78	0137	GMT	3926M	240	25KT	6	210 10 4						
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
2	15.60	32.912	5.86	0.36	3.	0.00	0.1	367.8	0	15.60	32.912	5.86	24.255	367.8	0.000
12	15.61	32.922	5.87	0.35	3.	0.01	0.1	367.2	10	15.61	32.923	5.87	24.259	367.4	0.037
30	15.61	32.972	5.89	0.30	3.	0.00	0.1	363.6	20	15.61	32.939	5.88	24.271	366.2	0.073
54	14.98	32.985	5.94	0.29	2.	0.00	0.1	349.5	30	15.61	32.972	5.89	24.299	363.6	0.110
63	14.74	32.994	5.92	0.26	2.	0.01	0.1	343.9	50	15.11	32.987	5.94	24.418	352.2	0.182
73	14.01	33.033	6.06	0.35	2.	0.02	0.1	326.5	75	13.78	33.047	6.05	24.745	321.1	0.266
88	12.22	33.097	5.88	0.41	4.	0.09	2.1	287.9	100	11.19	33.050	5.69	25.246	273.4	0.341
102	11.05	33.040	5.66	0.57	7.	0.08	6.2	271.7	125	10.13	33.210	5.27	25.556	243.9	0.407
125	10.13	33.210	5.27	0.74	10.	0.04	10.8	243.9	150	9.48	33.521	4.39	25.904	210.8	0.464
143	9.54	33.428	4.66	1.05	16.	0.02	16.3	218.4	200	8.75	33.963	2.94	26.367	166.8	0.560
167	9.41	33.724	3.77	1.33	21.	0.02	21.2	194.5	250	8.05	34.029	2.62	26.525	151.8	0.642
195	8.80	33.941	3.03	1.58	29.	0.01	25.7	169.1	300	7.37	34.074	2.07	26.659	139.1	0.717
224	8.53	34.017	2.67	1.76	34.	0.02	27.7	159.5	400	6.57	34.169	0.99	26.844	121.5	0.852
261	7.84	34.028	2.60	1.91	40.	0.01	29.4	148.8	500	5.92	34.257	0.46	26.997	107.0	0.973
318	7.21	34.097	1.77	2.21	51.	0.00	33.4	135.1							
388	6.66	34.158	1.08	2.51	62.	0.00	36.9	123.4							
458	6.15	34.216	0.64	2.75	71.	0.01	39.5	112.7							
534	5.77	34.290	0.36	2.94	81.	0.00	41.1	102.7							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

93080

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES			
31 10.0N	120 54.4W	4/ 1/78	0858	GMT	4213M	320	26KT	1	02	SIGT	DT	DD
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02
1	15.61	33.008	5.83	0.37	10.	0.01	0.1	361.0	0	15.61	33.008	5.83
11	15.62	33.008	5.82	0.34	7.	0.00	0.1	361.2	10	15.62	33.011	5.82
30	15.59	33.012	5.82	0.31	6.	0.01	0.1	360.2	20	15.61	33.012	5.82
39	15.49	33.022	5.95	0.30	8.	0.01	0.1	357.4	30	15.59	33.012	5.82
48	15.37	33.038	5.89	0.31	9.	0.01	0.1	353.7	50	15.34	33.040	5.89
63	15.10	33.040	5.90	0.31	9.	0.00	0.1	347.9	75	14.74	33.089	5.95
77	14.65	33.096	5.95	0.30	3.	0.08	0.0	334.6	100	12.34	33.148	5.76
96	12.76	33.174	5.81	0.46	5.	0.05	2.8	292.2	125	10.37	33.209	5.15
118	10.71	33.096	5.54	0.64	9.	0.03	7.4	261.8	150	9.53	33.562	4.20
137	9.95	33.433	4.47	1.09	16.	0.03	16.3	224.5	200	8.57	33.914	3.35
165	9.14	33.703	4.04	1.38	22.	0.03	20.4	191.9	250	7.81	34.017	2.73
193	8.68	33.882	3.44	1.65	28.	0.01	24.4	171.7	300	7.12	34.050	2.03
220	8.26	33.975	3.14	1.83	53.	0.02	26.5	158.7	400	6.25	34.133	0.98
256	7.72	34.019	2.64	2.07	41.	0.00	29.6	147.8	500	5.69	34.212	0.58
311	6.99	34.055	1.88	2.38	53.	0.00	33.5	135.4				
380	6.36	34.117	1.09	2.71	66.	0.00	38.2	122.7				
452	5.99	34.170	0.80	2.89	74.	0.01	40.1	114.3				
528	5.50	34.238	0.44	3.11	85.	0.01	42.1	103.4				

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

93090

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES			
30 51.0N	121 34.5W	4/ 1/78	1507	GMT	4022M	280	17KT	1	280	7	6	
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02
1	15.49	33.016	5.23U	0.67	3.	0.03	0.1	357.8	0	15.49	33.016	5.23
10	15.49	33.014	5.84	0.67	3.	0.00	0.1	358.0	10	15.49	33.014	5.84
29	15.48	33.018	5.67	0.65	3.	0.02	0.1	357.5	20	15.48	33.019	5.74
38	15.40	33.029	5.24U	0.61	2.	0.00	0.0	355.0	30	15.48	33.022	5.67
47	15.12	33.037	5.55U	0.58	2.	0.00	0.0	348.6	50	14.73	33.058	5.58
61	12.98	33.132	5.07U	0.66	4.	0.05	1.7	299.4	75	11.32	33.109	5.47
75	11.32	33.109	5.47	0.86	7.	0.10	6.6	271.2	100	9.85	33.308	4.47
93	10.11	33.228	4.69	1.01	11.	0.03	10.3	242.3	125	9.39	33.566	3.88
116	9.51	33.489	4.07	1.27	17.	0.08	15.7	213.5	150	9.00	33.776	3.32
135	9.27	33.641	3.67	1.58	21.	0.02	20.5	198.5	200	8.08	33.967	2.83
162	8.76	33.867	3.07	1.89	29.	0.02	24.9	174.0	250	7.32	34.014	2.60
190	8.26	33.953	2.78	2.00	54.	0.05	26.8	160.3	300	6.78	34.064	1.67
219	7.75	33.981	2.92	2.06	58.	0.00	28.1	151.1	400	6.08	34.133	1.00
256	7.25	34.019	2.50	2.34	45.	0.06	31.2	141.5	500	5.52	34.214	0.56
312	6.67	34.074	1.45	2.54	57.	0.04	35.9	129.8				
381	6.20	34.117	1.09	2.76	67.	0.04	38.3	120.8				
451	5.78	34.175	0.77	2.82	77.	0.12	38.2	111.4				
527	5.39	34.237	0.44	3.02	85.	0.10	41.2	102.5				

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

93100

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES			
30 30.0N	122 09.0W	4/ 1/78	2120	GMT	4117M	310	18KT	1	310	8	8	
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02
1	15.78	33.069	5.84	0.48	2.	0.00	0.0	360.1	0	15.78	33.069	5.84
11	15.73	33.063	5.84	0.46	2.	0.00	0.0	359.5	10	15.74	33.066	5.84
30	15.57	33.044	5.86	0.43	2.	0.00	0.0	357.5	20	15.69	33.065	5.85
38	15.38	33.081	5.92	0.38	2.	0.00	0.0	350.8	30	15.57	33.044	5.86
48	15.17	33.116	5.93	0.36	2.	0.00	0.0	343.8	50	15.05	33.120	5.94
63	13.95	33.126	5.98	0.38	3.	0.02	0.3	318.4	75	12.60	33.164	5.78
77	12.37	33.170	5.73	0.35	5.	0.13	3.9	285.3	100	10.68	33.267	5.10
96	10.85	33.258	5.15	0.84	9.	0.05	10.4	252.2	125	9.94	33.418	4.63
119	10.12	33.339	4.85	0.99	13.	0.02	14.0	234.2	150	9.36	33.686	3.84
138	9.59	33.592	4.12	1.38	19.	0.01	19.7	207.1	200	8.64	33.926	3.16
167	9.10	33.772	3.58	1.62	25.	0.02	23.2	186.2	250	7.84	34.023	2.74
195	8.71	33.906	3.21	1.80	50.	0.01	25.5	170.4	300	7.20	34.060	2.10
223	8.28	33.989	2.97	1.94	35.	0.01	27.3	156.0	400	6.20	34.141	0.94
261	7.67	34.028	2.63	2.13	41.	0.02	29.7	146.5	500	5.52	34.220	0.49
317	7.02	34.071	1.85	2.41	54.	0.02	33.8	134.6				
387	6.31	34.128	1.04	2.70	67.	0.00	37.9	121.3				
457	5.77	34.189	0.63	2.91	78.	0.01	40.0	110.2				
533	5.38	34.237	0.43	3.08	87.	0.02	41.3	102.1				

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

93110

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
30 09.6N	122 54.7W	4/ 2/78	0418	GMT	5169M	330	15KT		340 3 4						
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	16.57	33.137	5.73	0.67	2.	0.00	0.0	372.2	0	16.57	33.137	5.73	24.208	372.2	0.000
11	16.56	33.139	5.73	0.69	2.	0.00	0.0	371.9	10	16.56	33.139	5.73	24.212	371.9	0.037
30	16.58	33.171	5.74	0.64	2.	0.01	0.0	370.0	20	16.57	33.152	5.73	24.218	371.3	0.074
54	16.71	33.287	5.76	0.62	2.	0.01	0.0	364.4	30	16.58	33.171	5.74	24.232	370.0	0.112
63	16.92	33.457	5.73	0.60	2.	0.01	0.0	356.6	50	16.69	33.270	5.76	24.281	365.3	0.185
72	17.19	33.633	5.65	0.58	2.	0.01	0.0	349.9	75	17.06	33.634	5.66	24.473	346.9	0.275
86	16.19	33.546	5.75	0.56	3.	0.03	0.0	334.1	100	15.02	33.480	5.85	24.818	314.1	0.358
100	15.02	33.480	5.85	0.55	3.	0.01	0.0	314.1	125	12.83	33.299	5.73	25.131	284.3	0.434
124	12.94	33.308	5.74	0.66	5.	0.07	2.2	285.7	150	11.05	33.283	5.44	25.450	253.9	0.502
142	11.16	33.193	5.54	0.88	7.	0.04	6.5	262.2	200	9.51	33.768	4.52	26.093	192.9	0.615
165	10.85	33.447	5.22	1.02	10.	0.03	8.7	238.2	250	8.47	33.964	3.75	26.410	162.8	0.706
193	9.66	33.721	4.70	1.38	17.	0.03	16.3	198.6	300	7.58	34.009	3.17	26.578	146.8	0.786
221	9.15	33.866	4.02	1.62	22.	0.02	20.2	180.0	400	6.31	34.057	1.66	26.789	126.7	0.928
257	8.31	33.978	3.71	1.93	30.	0.03	23.9	159.2	500	5.68	34.202	0.91	26.959	110.6	1.052
312	7.41	34.006	3.00	2.22	42.	0.01	28.7	144.6							
382	6.52	34.036	1.91	2.62	56.	0.01	33.5	130.8							
452	5.88	34.125	1.10	2.88	72.	0.11	37.4	116.3							
529	5.88	34.225	0.80	3.14	74.	0.07	37.1	108.8							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

93120

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
29 49.0N	123 35.0W	4/ 2/78	1022	1124	GMT	3926M	310	13KT							
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	16.95	33.324	5.65	0.32	3.	0.00	0.1	367.0	0	16.95	33.324	5.65	24.263	367.0	0.000
11	16.93	33.324	5.64	0.31	3.	0.00	0.1	366.6	10	16.93	33.326	5.64	24.267	366.6	0.037
30	16.95	33.323	5.68	0.25	3.	0.00	0.0	367.1	20	16.94	33.325	5.66	24.265	366.7	0.073
56A	16.94	33.339	5.66	0.26	5.	0.00	0.0	365.7	30	16.95	33.323	5.68	24.262	367.1	0.110
194B	9.98	33.529	4.78	0.81	14.	0.05	13.4	217.9	50	16.94	33.325	5.66	24.266	366.7	0.184
221B	9.41	33.735	4.41	1.09	19.	0.03	17.3	193.7	75	17.14	33.615	5.63	24.440	350.1	0.274
259A	8.56	33.944	3.79	1.51	28.	0.01	22.7	165.4	100	15.19	33.433	5.66	24.745	321.1	0.358
314B	7.51	33.998	3.02	1.90	42.	0.02	28.5	146.5	125	13.22	33.273	5.41	25.034	293.5	0.436
385B	6.66	34.026	2.05	2.34	56.	0.05	33.8	133.3	150	11.22	33.221	5.22	25.374	261.2	0.506
456B	5.99	34.100	1.18	2.62	70.	0.07	37.2	119.5	200	9.85	33.576	4.70	25.888	212.3	0.626
532B	5.47	34.184	0.62	2.92	83.	0.04	40.2	107.1	250	8.76	33.907	3.94	26.321	171.2	0.724
									300	7.75	34.001	3.21	26.547	149.7	0.807
									400	6.50	34.041	1.85	26.751	130.3	0.952
									500	5.66	34.149	0.81	26.944	112.0	1.079

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

93130

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
29 29.0N	124 14.0W	4/ 2/78	1646	GMT	4213M	250	5KT	1	340 6 5						
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
2	16.90	33.311	5.49U	0.42	3.	0.02	0.0	366.8	0	16.90	33.311	5.65	24.264	366.8	0.000
12	16.89	33.309	5.65	0.35	3.	0.01	0.0	366.8	10	16.89	33.312	5.65	24.265	366.8	0.037
40	16.90	33.318	5.66	0.34	3.	0.00	0.0	366.3	20	16.89	33.314	5.65	24.267	366.6	0.073
64	16.90	33.389	5.51U	0.32	2.	0.00	0.0	361.1	30	16.90	33.317	5.66	24.268	366.5	0.110
83	16.96	33.560	5.64	0.33	3.	0.00	0.0	350.0	50	16.90	33.338	5.66	24.283	365.0	0.184
98	16.11	33.509	5.60	0.30	3.	0.00	0.0	335.0	75	16.93	33.477	5.64	24.382	355.6	0.274
111	15.78	33.503	5.63	0.29	3.	0.00	0.0	328.4	100	16.05	33.509	5.60	24.610	333.9	0.361
130	14.95	33.472	5.70	0.30	3.	0.02	0.1	313.2	125	15.25	33.486	5.69	24.772	318.5	0.443
149	12.90	33.402	5.49	0.42	5.	0.03	2.8	278.0	150	12.82	33.401	5.48	25.210	276.8	0.519
173	11.34	33.397	5.31	0.60	8.			250.3	200	9.82	33.581	4.67	25.895	211.6	0.643
196	9.99	33.555	4.84	0.94	14.			216.1	250	8.68	33.938	3.95	26.358	167.6	0.740
217	9.25	33.685	3.99	1.36	21.			194.9	300	7.91	34.004	3.21	26.525	151.8	0.822
245	8.77	33.919	3.99	1.48	26.			170.3	400	6.50	34.052	1.80	26.760	129.5	0.968
276	8.22	33.979	3.63	1.69	32.			157.8	500	5.71	34.144	0.94	26.935	112.9	1.095
323	7.64	34.014	2.78	1.99	41.			147.1							
383	6.68	34.040	1.98	2.38	55.			132.5							
454	6.06	34.093	1.31	2.67	67.			120.9							
531	5.49	34.184	0.72	2.96	81.			107.4							

A) THE LAST SEVEN BOTTLES OF CAST I PRETRIPPED AND WERE OMITTED. THE INTERPOLATED DATA BETWEEN 50 AND 200 METERS HAVE BEEN DERIVED FROM THE CTD DATA.

B) CAST II.

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

93140

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
29 09.0N	124 53.0W	4/ 2/78	2303	GMT	4314M	020	15KT	1	010 8 3						
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
1	17.56	33.569	5.63	0.46	3.	0.00	0.0	362.9	0	17.56	33.569	5.63	24.305	362.9	0.000
10	17.47	33.564	5.62	0.45	2.	0.00	0.0	361.3	10	17.47	33.564	5.62	24.323	361.3	0.036
39	17.41	33.559	5.62	0.41	3.	0.01	0.0	360.3	20	17.45	33.564	5.62	24.326	360.9	0.072
62	17.40	33.580	5.63	0.37	2.	0.02	0.0	358.5	30	17.43	33.562	5.62	24.330	360.6	0.109
81	17.29	33.612	5.65	0.38	2.	0.00	0.0	353.7	50	17.41	33.566	5.62	24.339	359.7	0.181
95	16.70	33.693	5.73	0.37	2.	0.00	0.0	334.5	75	17.32	33.604	5.64	24.387	355.2	0.271
109	15.30	33.570	5.78	0.35	3.	0.01	0.0	313.3	100	16.20	33.658	5.76	24.687	326.6	0.356
128	14.57	33.577	5.68	0.37	3.	0.05	0.4	297.8	125	14.66	33.576	5.70	24.968	299.8	0.436
147	13.28	33.483	5.55	0.44	4.	0.06	2.5	279.3	150	13.05	33.468	5.53	25.216	276.2	0.508
170	11.57	33.426	5.31	0.63	6.	0.03	6.5	252.1	200	9.88	33.682	4.50	25.965	205.0	0.631
193	10.16	33.625	4.71	0.95	13.	0.02	13.5	213.7	250	8.67	33.976	3.72	26.390	164.7	0.725
217	9.36	33.802	4.05	1.29	20.	0.01	19.4	187.9	300	7.70	34.016	3.08	26.566	147.9	0.806
245	8.77	33.963	3.77	1.49	26.	0.01	22.4	167.1	400	6.34	34.082	1.43	26.806	125.1	0.948
278	8.11	34.002	3.43	1.72	34.	0.00	25.4	154.6	500	5.64	34.190	0.67	26.979	108.8	1.070
325	7.28	34.026	2.63	2.08	45.	0.01	30.5	141.4							
386	6.48	34.067	1.59	2.46	59.	0.01	36.0	128.0							
456	5.88	34.141	0.94	2.73	72.	0.00	39.2	115.1							
531	5.54	34.222	0.55	2.96	81.	0.01	40.9	105.1							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

93150

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
28 50.4N	125 33.6W	4/ 3/78	0452	GMT	4411M	070	10KT	050	5 2						
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
2	17.30	33.466	5.67	0.45	2.	0.01	0.1	364.5	0	17.30	33.466	5.67	24.289	364.5	0.000
11	17.28	33.453	5.67	0.42	1.	0.01	0.1	365.0	10	17.28	33.457	5.67	24.284	365.0	0.036
30	17.11	33.420	5.70	0.37	1.	0.00	0.1	363.6	20	17.20	33.438	5.68	24.289	364.5	0.073
53	17.08	33.427	5.67	0.36	1.	0.01	0.1	362.4	30	17.11	33.420	5.70	24.298	363.6	0.110
63	17.14	33.498	5.71	0.33	1.	0.01	0.1	358.6	50	17.08	33.428	5.67	24.309	362.6	0.182
72	17.24	33.603	5.65	0.29	1.	0.01	0.1	353.2	75	17.27	33.622	5.65	24.414	352.6	0.272
86	17.38	33.701	5.63	0.73U	0.	0.00	0.1	349.2	100	16.61	33.673	5.68	24.609	334.0	0.359
100	16.61	33.673	5.68	0.41	0.	0.01	0.1	334.0	125	14.57	33.488	5.74	24.920	304.4	0.439
122	14.83	33.498	5.76	0.40	1.	0.03	0.2	308.9	150	12.49	33.414	5.50	25.284	269.8	0.512
142	13.12	33.444	5.56	0.51	1.	0.04	2.3	279.1	200	10.00	33.682	4.50	25.944	207.0	0.633
165	11.47	33.390	5.33	0.72	4.	0.02	6.7	233.0	250	8.85	33.944	3.96	26.336	169.8	0.729
193	10.23	33.620	4.62	1.09	12.	0.01	13.8	215.2	300	7.94	33.997	3.33	26.516	152.6	0.813
221	9.43	33.837	4.22	1.31	18.	0.01	18.2	186.4	400	6.59	34.062	1.80	26.757	129.8	0.959
259	8.70	33.959	3.89	1.62	25.	0.01	21.8	166.3	500	5.64	34.155	0.79	26.951	111.3	1.086
315	7.68	33.998	3.09	2.02	37.	0.00	27.5	148.9							
385	6.77	34.046	2.02	2.48	52.	0.00	33.9	133.2							
455	6.01	34.116	1.11	2.84	66.	0.01	38.4	118.5							
530	5.45	34.176	0.70	3.15	76.	0.00	41.3	107.5							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

93160

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
28 33.2N	126 10.7W	4/ 3/78	1022	GMT	4411M	040	7KT	2							
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
1	17.44	33.566	5.64	0.22	0.	0.00	0.2	360.4	0	17.44	33.566	5.64	24.332	360.4	0.000
11	17.45	33.564	5.65	0.16	0.	0.00	0.2	360.8	10	17.45	33.566	5.65	24.328	360.8	0.036
30	17.37	33.563	5.66	0.13	0.	0.00	0.1	359.0	20	17.42	33.565	5.65	24.335	360.1	0.072
54	17.33	33.561	5.73	0.13	0.	0.00	0.1	358.3	30	17.37	33.563	5.66	24.346	359.0	0.108
64	17.37	33.562	5.67	0.13	0.	0.00	0.1	359.1	50	17.34	33.563	5.73	24.353	358.4	0.180
73	17.33	33.572	5.65	0.11	0.	0.00	0.1	357.5	75	17.28	33.580	5.65	24.379	355.9	0.270
87	16.83	33.605	5.68	0.13	0.	0.05	0.0	343.8	100	16.15	33.563	5.80	24.628	332.2	0.357
101	16.10	33.558	5.81	0.14	0.	0.05	0.0	331.2	125	15.00	33.670	5.63	24.968	299.8	0.436
125	15.00	33.670	5.63	0.04	1.	0.06	0.0	299.8	150	12.41	33.439	5.43	25.320	266.3	0.508
143	12.92	33.457	5.49	0.40	3.	0.22	1.9	274.3	200	10.59	33.587	4.90	25.769	223.7	0.633
166	11.59	33.454	5.28	0.57	6.	0.34	5.3	250.4	250	9.10	33.908	4.09	26.266	176.4	0.735
194	10.75	33.551	4.99	0.87	11.	0.03	10.3	228.9	300	8.12	33.991	3.62	26.493	154.8	0.820
221	10.01	33.716	4.57	0.92	13.	0.08	15.0	204.5	400	6.52	34.042	1.91	26.751	130.4	0.968
258	8.86	33.947	3.97	1.53	23.	0.02	21.4	169.6	500	5.63	34.125	1.00	26.929	113.5	1.096
313	7.95	33.995	3.51	1.88	32.	0.04	25.3	152.8							
382	6.73	34.028	2.15	2.44	50.	0.02	32.8	134.0							
448	6.06	34.079	1.41	2.78	64.	0.04	57.2	121.9							
530	5.42	34.151	0.84	2.66	77.			38.9	109.0						

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

93170

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT	WAVES					
28 10.4N	126 52.0W	4/ 3/78	1624	GMT	4411M	060	4Kt	5	350	5 5					
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	17.74	33.786	5.56	0.35	1.	0.01	0.1	351.3	0	17.74	33.786	5.56	24.427	351.3	0.000
11	17.73	33.786	5.57	0.31	0.	0.00	0.1	351.0	10	17.73	33.787	5.57	24.430	351.1	0.035
39	17.77	33.795	5.57	0.27	0.	0.00	0.0	351.3	20	17.74	33.790	5.57	24.429	351.1	0.070
62	17.87	33.872	5.59	0.30	0.	0.00	0.1	348.0	30	17.76	33.794	5.57	24.428	351.2	0.106
81	17.97	33.930	5.54	0.29	1.	0.01	0.1	346.1	50	17.81	33.830	5.58	24.442	349.9	0.176
96	17.69	33.898	5.52	0.84U	1.	0.01	0.1	342.0	75	17.94	33.911	5.56	24.473	346.9	0.264
109	16.83	33.848	5.66	0.44	2.	0.00	0.1	326.1	100	17.45	33.884	5.56	24.571	337.6	0.350
128	15.68	33.794	5.55	0.32	2.	0.01	0.1	305.0	125	15.87	33.807	5.58	24.880	308.2	0.431
147	14.24	33.644	5.54	0.47	3.	0.01	1.4	286.2	150	14.00	33.634	5.52	25.151	282.4	0.506
171	12.45	33.610	5.33	0.58	5.	0.02	4.1	254.4	200	10.86	33.661	5.07	25.778	222.7	0.634
194	11.11	33.644	5.12	0.81	9.	0.02	5.1	228.1	250	9.20	33.953	4.47	26.288	178.3	0.736
218	10.23	33.732	4.90	1.03	12.	0.00	11.8	206.9	300	8.14	33.996	3.86	26.485	155.6	0.821
246	9.29	33.939	4.50	1.26	19.	0.05	15.8	176.7	400	6.71	34.040	2.04	26.724	132.9	0.971
278	8.63	33.989	4.22	1.63	25.	0.00	20.5	163.1	500	5.74	34.143	0.88	26.930	113.4	1.100
325	7.63	33.993	3.39	2.01	37.	0.05	25.5	148.5							
386	6.88	34.025	2.28	2.46	50.	0.00	28.7	136.2							
456	6.09	34.101	1.23	2.87	65.	0.00	36.1	120.6							
534	5.54	34.169	0.78	3.26	78.	0.00	40.8	109.1							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

93180

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT	WAVES					
27 50.8N	127 30.9W	4/ 3/78	2242	GMT	4508M	060	4Kt	1	010	7 5					
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	18.19	33.743	5.59	0.30	2.	0.00	0.0	364.9	0	18.19	33.743	5.59	24.285	364.9	0.000
10	17.75	33.739	5.60	0.29	2.	0.00	0.0	354.9	10	17.75	33.739	5.60	24.389	354.9	0.036
39	17.66	33.731	5.62	0.26	2.	0.00	0.0	353.4	20	17.72	33.738	5.61	24.394	354.4	0.072
62	17.59	33.718	5.64	0.25	2.	0.00	0.0	352.8	30	17.69	33.735	5.61	24.400	353.9	0.107
81	17.69	33.818	5.60	0.26	2.	0.00	0.0	347.8	50	17.61	33.722	5.63	24.408	353.1	0.178
95	17.66	33.885	5.58	0.23	2.	0.00	0.0	342.2	75	17.66	33.783	5.61	24.443	349.8	0.266
109	17.62	33.892	5.56	0.21	2.	0.00	0.0	340.8	100	17.65	33.886	5.57	24.526	341.9	0.353
128	16.97	33.874	5.58	0.21	3.	0.00	0.0	327.4	125	17.13	33.881	5.58	24.646	330.5	0.438
146	15.48	33.806	5.57	0.20	4.	0.00	0.0	299.9	150	15.15	33.778	5.56	25.018	295.0	0.518
169	13.66	33.654	5.48	0.40	5.	0.06	1.8	274.0	200	11.58	33.667	5.21	25.653	234.6	0.652
192	12.20	33.648	5.32	0.58	7.	0.16	4.6	247.0	250	9.75	33.876	4.59	26.137	188.7	0.760
215	10.55	33.722	5.00	0.97	12.	0.01	11.0	212.9	300	8.59	33.998	4.06	26.418	161.9	0.851
243	9.93	33.844	4.70	1.10	16.	0.09	13.5	193.8	400	6.76	34.013	2.47	26.695	135.7	1.005
275	9.12	33.966	4.23	1.57	24.	0.00	19.9	172.1	500	5.74	34.107	1.15	26.902	116.1	1.137
322	8.17	34.000	3.90	1.88	32.	0.01	23.9	155.6							
382	7.05	34.003	2.79	2.39	47.	0.00	30.6	140.0							
453	6.09	34.054	1.64	2.86	55.	0.01	36.3	124.1							
529	5.63	34.142	0.95	3.02	78.	0.10	37.8	112.1							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

93190

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT	WAVES					
27 30.5N	128 09.8W	4/ 4/78	0427	GMT	4508M	340	3Kt	1	100	3 6					
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	18.53	33.811	5.55	0.21	3.	0.01	0.2	368.0	0	18.53	33.811	5.55	24.252	368.0	0.000
11	17.97	33.818	5.59	0.19	3.	0.00	0.2	354.3	10	18.01	33.819	5.59	24.385	355.3	0.036
39	17.85	33.815	5.59	0.16	3.	0.01	0.2	351.7	20	17.93	33.819	5.59	24.405	353.5	0.072
63	17.80	33.808	5.61	0.10	3.	0.00	0.2	351.1	30	17.89	33.817	5.59	24.414	352.5	0.107
82	18.13	34.009	5.53	0.14	2.	0.00	0.2	344.1	50	17.83	33.813	5.60	24.426	351.4	0.178
96	18.12	34.059	5.56	0.13	2.	0.00	0.2	340.2	75	18.01	33.934	5.56	24.473	346.9	0.265
110	18.37	34.270	5.47	0.05	2.	0.00	0.1	330.8	100	18.19	34.113	5.53	24.566	338.1	0.352
129	16.44	33.942	5.58	0.09	3.	0.00	0.1	310.6	125	18.92	34.026	5.56	24.806	315.2	0.434
147	15.48	33.901	5.36	0.25	3.	0.04	0.1	292.9	150	15.24	33.886	5.32	25.082	289.0	0.511
171	15.48	33.799	5.05	0.45	5.	0.02	4.1	259.9	200	11.79	33.822	4.86	25.733	227.0	0.642
194	12.13	33.821	4.89	0.69	8.	0.03	7.2	233.0	250	9.88	33.924	4.06	26.153	187.1	0.748
218	10.90	33.830	4.72	0.85	12.	0.01	10.5	210.8	300	8.51	34.013	3.54	26.443	159.6	0.837
246	10.01	33.912	4.11	1.29	18.	0.00	16.7	190.0	400	7.28	34.163	1.46	26.742	131.2	0.989
278	9.04	33.990	3.80	1.72	26.	0.10	20.4	169.1	500	6.64	34.279	0.56	26.920	114.3	1.118
325	8.03	34.031	3.15	2.07	38.	0.03	26.2	151.3							
384	7.41	34.140	1.71	2.65	51.	0.03	32.4	134.6							
454	6.92	34.227	0.89	2.65	62.	0.00	31.7	121.6							
529	6.49	34.308	0.44	3.05	72.	0.06	36.5	110.1							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

93200

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
27 10.4N	128 48.9W	4/ 4/78	1031	GMT	4411M	300	14KT	5							
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
1	18.33	34.021	5.52	0.31	3.	0.02	0.0	347.9	0	18.33	34.021	5.52	24.462	347.9	0.000
11	18.26	34.014	5.52	0.26	2.	0.00	0.0	346.8	10	18.27	34.016	5.52	24.473	346.9	0.035
39	18.14	34.028	5.53	0.24	2.	0.00	0.0	343.0	20	18.21	34.016	5.52	24.488	345.5	0.069
63	18.16	34.053	5.57	0.23	2.	0.01	0.0	341.6	30	18.16	34.021	5.53	24.502	344.1	0.104
82	18.18	34.052	5.51	0.22	2.	0.01	0.0	342.2	50	18.15	34.044	5.55	24.524	342.1	0.173
96A	18.18	34.087	5.49	0.20	2.	0.00	0.0	339.6	75	18.17	34.054	5.53	24.525	342.0	0.259
110A	18.31	34.219	5.47	0.17	2.	0.02	0.0	333.1	100	18.30	34.180	5.48	24.591	335.7	0.344
129	18.28	34.349	5.49	0.16	2.	0.01	0.0	322.9	125	18.29	34.313	5.48	24.695	325.7	0.428
148A	16.16	33.960	5.48	0.24	3.	0.02	0.2	303.2	150	16.30	34.050	5.47	24.969	299.7	0.507
171A	15.13	33.997	5.29	0.31	3.	0.02	1.2	278.6	200	13.26	33.898	4.92	25.506	248.6	0.647
195	13.81	33.933	5.03	0.41	5.	0.01	4.5	256.5	250	10.48	33.896	4.41	26.028	199.0	0.761
218	11.40	33.808	4.56	0.84	11.	0.00	10.7	221.0	300	8.93	34.009	3.90	26.374	166.1	0.855
245	10.68	33.881	4.43	0.87	14.	0.00	11.8	203.3	400	7.07	34.057	2.37	26.687	136.4	1.012
277	9.44	33.968	4.23	1.29	21.	0.00	17.7	176.9	500	5.82	34.132	1.11	26.912	115.1	1.144
322	8.56	34.029	3.53	1.55	50.	0.01	21.3	159.1							
382	7.35	34.040	2.68	2.00	46.	0.02	28.1	141.3							
453	6.38	34.106	1.53	2.51	64.	0.01	33.9	123.8							
530	5.49	34.138	0.99	2.93	79.	0.03	39.5	110.8							

RV ALEJANDRO DE HUMBOLDT

CALCOFI CRUISE 7804

95029

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
32 36.1N	117 15.2W	3/30/78	0353	GMT	650M	180	6KTT								
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
08	17.19	33.151	5.84	0.	0.15	0.0	385.0	0	17.19	33.151	5.84	24.074	385.0	0.000	
10	17.15	33.140	6.04	0.	0.06	0.0	384.9	10	17.15	33.140	6.04	24.075	384.9	0.039	
30	13.68	33.328	6.04	3.	0.33	1.1	298.3	20	15.62	33.212	6.04	24.478	346.5	0.075	
40	12.40	33.397	5.12	11.	0.28	7.1	269.1	30	13.68	33.328	6.04	24.983	298.3	0.107	
55	11.63	33.466	4.66	13.	0.14	10.5	250.2	50	11.80	33.446	4.75	25.440	254.9	0.163	
70	10.96	33.582	4.19	18.	0.12	14.8	230.1	75	10.84	33.636	3.99	25.763	224.2	0.223	
96	10.51	33.839	3.24	28.	0.09	20.1	203.6	100	10.44	33.866	3.17	26.012	200.5	0.277	
116	10.15	33.946	2.99	29.	0.11	22.3	189.8	125	10.01	33.986	2.90	26.180	184.6	0.325	
136	9.85	34.027	2.78	33.	0.10	24.1	179.0	150	9.69	34.079	2.51	26.304	172.7	0.371	
156	9.63	34.097	2.39	36.	0.09	24.4	170.3	200	9.08	34.197	1.98	26.497	154.5	0.454	
186	9.19	34.165	2.10	41.			158.4	250	8.68	34.232	1.59	26.588	145.8	0.532	
221	8.95	34.229	1.82	46.	0.02	28.2	150.0	300	8.09	34.250	1.25	26.692	136.0	0.605	
251	8.67	34.251	1.58	47.			145.7	400	7.20	34.262	0.81	26.831	122.8	0.740	
302	8.07	34.250	1.24	55.	0.01	24.6	135.6	500	6.42	34.303	0.50	26.970	109.6	0.863	
357	7.58	34.249	1.00	61.			128.8	600	5.86	34.345	0.32	27.074	99.7	0.975	
443	6.84	34.279	0.64	72.	0.00	35.0	116.7								
529	6.23	34.315	0.45	82.	0.00	37.6	106.3								
614	5.80	34.349	0.30	91.	0.00	39.0	98.6								

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

95030

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
32 34.3N	117 22.1W	3/30/78	0045	GMT	307M	200	8KTT								
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
18	18.0	32.957	6.10	7.	0.03	0.7	417.6	0	18.00	32.957	6.10	23.732	417.6	0.000	
11		32.957	6.23	4.	0.00	0.4		10	16.98	32.957	6.22	24.088	383.7	0.040	
20	15.25	33.239	5.98	5.	0.08	0.0	336.5	20	15.25	33.239	5.98	24.583	336.5	0.076	
29	13.16	33.366	5.24	8.	0.37	0.0	285.6	30	13.02	33.375	5.19	25.151	282.4	0.107	
59	12.17	33.421	4.85	9.	0.26	8.7	263.2	50	11.52	33.505	4.48	25.537	245.7	0.160	
48	11.63	33.497	4.50	0.80	11.	0.11	12.1	248.0	75	10.83	33.723	3.52	25.833	217.5	0.218
57	11.22	33.526	4.40	0.93	13.	0.08	13.8	238.7	100	10.17	33.907	2.92	26.091	193.1	0.270
66	11.02	33.621	4.01	1.03	15.	0.08	15.9	228.3	125	9.88	33.984	2.67	26.200	182.6	0.318
75	10.85	33.723	3.52	1.34	18.	0.12	18.1	217.5	150	9.59	34.079	2.31	26.322	171.0	0.363
84	10.66	33.806	3.22	1.52	21.	0.05	19.8	208.5							
93	10.33	33.875	3.00	1.73	24.	0.06	21.6	198.0							
102	10.13	33.912	2.90	1.58	26.	0.02	22.7	192.0							
111	9.97	33.952	2.76	1.54	28.	0.04	23.6	186.4							
121	9.91	33.968	2.71	1.68	28.	0.03	25.9	184.3							
130C	9.83	34.009	2.60	1.98	29.	0.02	24.6	180.0							
140C	9.69	34.056	2.40	2.11	32.	0.00	25.7	174.3							
149C	9.60	34.076	2.32	1.97	32.	0.02	26.0	171.4							
159C	9.49	34.098	2.18	2.04	35.	0.02	26.5	168.0							

RV ALEJANDRO DE HUMBOLDT

CALCOFI CRUISE 7804

97030

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
32 15.9N	117 07.0W	4/ 4/78	2347	GMT	58M	280	9KTT								
Z	T	S	02	P04	S103	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
0	17.41	33.092	5.88	3.	0.00	0.0	394.3	0	17.41	33.092	5.88	23.977	394.3	0.000	
10	16.97	33.086	5.96	3.	0.00	0.0	384.8	10	16.97	33.086	5.96	24.076	384.8	0.039	
20	16.01	33.168	6.05	2.	0.00	0.0	357.8	20	16.01	33.168	6.05	24.360	357.8	0.076	
30	13.72	33.347	5.44	5.	0.16	2.4	297.7	30							

RV ALEJANDRO DE HUMBOLDT

CALCOFI CRUISE 7804

97035

LATITUDE 32 05.5N	LONGITUDE 117 27.5W	MO/DAY/YR 4/ 5/78	MESSANGER 0500 GMT	TIME	BOTTOM 1210M	WIND 310	SPEED 20KT	WEATHER 1	DOMINANT WAVES					
Z	T	S	02	P04 S103	N02 N03	DT	Z	T	S	02	SIGT	DT	DD	
1	16.18	33.216	5.88	3.	0.02	0.0	357.9	0	16.18	33.216	5.88	24.358	357.9	0.000
11	16.17	33.213	5.89	4.	0.02	0.0	357.9	10	16.17	33.216	5.89	24.358	357.9	0.036
31	14.78	33.262	6.32	4.	0.04	0.0	325.1	20	15.64	33.232	6.11	24.489	345.4	0.071
40	14.23	33.278	6.19	4.	0.04	0.0	312.9	30	14.87	33.261	6.30	24.681	327.2	0.105
55	12.78	33.296	5.52	8.	0.34	5.0	283.6	50	13.30	33.285	5.78	25.026	294.3	0.167
69	11.42	33.421	4.76	15.	0.14	11.6	249.9	75	11.05	33.473	4.57	25.598	239.9	0.234
93	10.41	33.620	4.11	19.	0.06	16.6	218.1	100	10.29	33.690	5.86	25.901	211.1	0.291
113	10.13	33.804	3.43	24.	0.07	20.5	200.0	125	9.93	33.876	3.20	26.107	191.5	0.342
132	9.81	33.907	3.09	28.	0.06	22.5	187.2	150	9.56	33.990	2.78	26.257	177.3	0.389
151	9.55	33.993	2.76	31.	0.05	24.4	176.7	200	9.06	34.175	2.02	26.483	155.8	0.474
179	9.17	34.105	2.33	36.	0.06	26.4	162.6	250	8.62	34.223	1.64	26.589	145.7	0.551
212	9.01	34.202	1.88	39.	0.00	27.0	152.9	300	8.03	34.254	1.24	26.704	134.8	0.624
240	8.75	34.216	1.71	42.	0.00	28.9	148.0	400	7.06	34.277	0.71	26.863	119.7	0.757
287	8.15	34.245	1.35	48.	0.00	30.8	137.1	500	6.34	34.312	0.47	26.987	107.9	0.877
358	7.72	34.274	0.94	54.	0.00	32.4	128.9							
419	6.87	34.278	0.67	65.	0.00	35.3	117.2							
500	6.34	34.312	0.47	75.	0.00	37.3	107.9							
584	5.74	34.282	U 0.42	83.	0.00	38.3								

RV ALEJANDRO DE HUMBOLDT

CALCOFI CRUISE 7804

97040

LATITUDE 31 56.0N	LONGITUDE 117 48.0W	MO/DAY/YR 4/ 5/78	MESSANGER 0909 GMT	TIME	BOTTOM 1456M	WIND 140	SPEED 15KT	WEATHER 1	DOMINANT WAVES					
Z	T	S	02	P04 S103	N02 N03	DT	Z	T	S	02	SIGT	DT	DD	
0	15.75	33.199	5.90	1.	0.02	0.0	350.0	0	15.75	33.199	5.90	24.442	350.0	0.000
9	15.78	33.196	5.90	4.	0.02	0.0	350.8	10	15.77	33.197	5.90	24.436	350.5	0.035
27	15.24	33.219	6.01	4.	0.02	0.0	337.8	20	15.53	33.210	5.96	24.498	344.6	0.070
37	14.71	33.245	6.02	4.	0.03	0.0	324.9	30	15.10	33.230	6.01	24.606	334.3	0.104
50	13.68	33.246	5.92	5.	0.16	1.3	304.4	50	13.68	33.246	5.92	24.920	304.4	0.168
64	12.51	33.244	5.56	6.	0.31	5.3	282.4	75	11.73	33.317	5.16	25.353	263.2	0.239
86	11.10	33.423	4.72	13.	0.08	12.6	244.2	100	10.54	33.585	4.20	25.775	223.0	0.301
104	10.42	33.626	4.07	19.	0.07	17.1	217.9	125	9.95	33.747	3.69	26.003	201.3	0.354
122	10.00	33.726	3.75	21.	0.05	19.6	203.6	150	9.41	33.911	3.20	26.221	180.7	0.403
140	9.68	33.845	3.39	24.	0.06	22.0	189.7	200	8.75	34.114	2.31	26.485	155.6	0.488
167	8.98	34.008	2.68	31.	0.00	25.5	166.9	250	8.27	34.169	1.81	26.602	144.5	0.565
198	8.77	34.110	2.33	36.	0.01	27.6	156.2	300	7.86	34.224	1.32	26.705	134.7	0.638
225	8.48	34.138	2.07	40.	0.00	28.9	149.8	400	7.08	34.282	0.76	26.864	119.6	0.770
269	8.12	34.191	1.61	47.	0.00	30.9	140.7	500	6.29	34.317	0.54	26.997	107.0	0.890
319	7.71	34.240	1.16	54.	0.00	32.8	131.3							
396	7.11	34.280	0.77	63.	0.00	34.8	120.2							
476	6.46	34.306	0.59	74.	0.01	36.7	109.9							
558	5.94	34.343	0.41	80.	0.01	38.3	100.7							

RV ALEJANDRO DE HUMBOLDT

CALCOFI CRUISE 7804

97050

LATITUDE 31 33.6N	LONGITUDE 118 32.5W	MO/DAY/YR 4/ 5/78	MESSANGER 1731 GMT	TIME	BOTTOM 2600M	WIND 280	SPEED 14KT	WEATHER 1	DOMINANT WAVES 280 4 6				
Z	T	S	02	P04 S103	N02 N03	DT	Z	T	S	02	SIGT	DT	DD
1	16.11	33.209	5.83	3.		356.9	0	16.11	33.209	5.83	24.368	356.9	0.000
11	16.10	33.206	5.86	2.		356.9	10	16.10	33.207	5.86	24.369	356.9	0.036
35	15.26	33.224	5.97	1.		337.8	20	15.91	33.210	5.89	24.413	352.7	0.071
45	14.78	33.234	6.02	1.		327.2	30	15.52	33.219	5.94	24.506	343.8	0.106
60	14.42	33.244	5.99	1.		319.1	50	14.68	33.239	6.01	24.704	325.0	0.173
75	13.21	33.274	5.54	3.		293.3	75	13.21	33.274	5.54	25.037	293.3	0.251
99	11.31	33.390	4.89	9.		250.3	100	11.27	33.410	4.81	25.510	248.3	0.319
119	10.84	33.734	3.44	18.		216.9	125	10.78	33.778	3.26	25.884	212.7	0.377
138	10.68	33.825	3.06	22.		207.5	150	10.53	33.869	2.91	25.998	201.9	0.430
168	10.29	33.920	2.75	25.		194.0	200	9.88	34.006	2.55	26.217	181.0	0.527
198	9.90	34.000	2.56	28.		181.8	250	9.20	34.119	2.17	26.416	162.1	0.616
237	9.41	34.092	2.30	35.		167.2	300	8.56	34.180	1.79	26.565	147.9	0.696
266	8.95	34.146	2.02	36.		156.2	400	7.39	34.229	1.11	26.779	127.7	0.839
316	8.40	34.188	1.70	42.		144.9	500	6.23	34.248	0.76	26.951	111.3	0.966
380	7.66	34.228	1.20	52.		131.5	600	5.65	34.295	0.53	27.062	100.9	1.079
478	6.41	34.232	0.86	72.		114.8							
567	5.81	34.291	0.54	80.		103.1							
641	5.49	34.297	0.52	82.		98.9							

RV ALEJANDRO DE HUMBOLDT

CALCOFI CRUISE 7804

97060

LATITUDE 31 15.5N	LONGITUDE 119 10.0W	MO/DAY/YR 4/ 6/78	MESSANGER 0014	TIME GMT	BOTTOM 3584M	WIND 320	SPEED 12KT	WEATHER 1	DOMINANT WAVES 320 7 6						
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
0	16.23	33.173	5.76	2.	0.09	0.0	362.2	0	16.23	33.173	5.76	24.313	362.2	0.000	
10	16.22	33.172	5.79	2.	0.09	0.0	362.0	10	16.22	33.172	5.79	24.315	362.0	0.036	
29	16.14	33.158	5.82	3.	0.09	0.0	361.3	20	16.18	33.167	5.81	24.319	361.7	0.072	
39	15.57	33.198	5.94	2.	0.09	0.0	346.2	50	16.09	33.164	5.83	24.337	359.9	0.109	
53	15.11	33.230	6.09	2.	0.09	0.0	334.3	50	15.20	33.228	6.07	24.384	336.4	0.178	
68	14.46	33.241	6.02	2.	0.11	0.0	320.2	75	13.72	33.205	5.93	24.879	308.3	0.259	
91	11.95	33.170	5.62	6.	0.19	3.3	277.7	100	11.36	33.245	5.37	25.365	262.1	0.331	
110	10.93	33.348	5.06	11.	0.13	9.4	246.9	125	10.65	33.486	4.56	25.680	232.1	0.394	
129	10.61	33.523	4.43	14.	0.13	14.3	228.6	150	10.23	33.767	3.81	25.971	204.4	0.449	
147	10.28	33.735	3.90	19.	0.12	18.0	207.5	200	8.85	33.954	3.30	26.345	168.9	0.544	
175	9.68	33.936	3.25	25.	0.12	23.2	183.0	250	8.02	34.027	2.85	26.528	151.5	0.626	
207	8.63	33.958	3.32	31.	0.02	26.0	165.4	300	7.40	34.055	2.27	26.640	140.9	0.701	
234	8.26	34.017	3.00	37.	0.02	28.6	155.6	400	6.52	34.178	1.02	26.857	120.3	0.837	
280	7.60	34.032	2.56	44.	0.01	31.7	145.2	500	5.90	34.257	0.56	27.000	106.7	0.957	
330	7.14	34.092	1.81	54.	0.01	36.1	134.6								
409	6.45	34.187	0.94	69.	0.02	39.8	118.6								
490	5.95	34.251	0.57	78.	0.02	41.9	107.7								
576	5.53	34.278	0.45	89.	0.02	43.5	100.8								

RV ALEJANDRO DE HUMBOLDT

CALCOFI CRUISE 7804

97070

LATITUDE 30 55.0N	LONGITUDE 119 50.5W	MO/DAY/YR 4/ 6/78	MESSANGER 0622	TIME GMT	BOTTOM 3344M	WIND 310	SPEED 12KT	WEATHER 1	DOMINANT WAVES						
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
0	15.77	32.982	5.83	4.	0.02	0.0	366.2	0	15.77	32.982	5.83	24.271	366.2	0.000	
9	15.77	32.982	5.84	3.	0.02	0.0	366.2	10	15.77	32.982	5.84	24.271	366.2	0.037	
27	15.77	32.984	5.87	3.	0.02	0.0	366.1	20	15.77	32.983	5.85	24.272	366.2	0.073	
54	15.23	32.988	5.90	3.	0.02	0.0	354.5	30	15.75	32.986	5.87	24.276	365.8	0.110	
62	14.81	33.019	5.95	4.	0.02	0.0	343.5	50	15.37	32.986	5.90	24.363	357.5	0.183	
76	14.23	33.016	6.04	4.	0.02	0.0	323.1	75	14.26	33.016	6.03	24.623	332.7	0.269	
89	13.91	33.030	6.07	4.	0.03	0.0	324.7	100	12.96	33.096	6.06	24.949	301.6	0.349	
102	12.66	33.116	6.06	4.	0.07	0.3	294.6	125	10.63	33.329	4.89	25.561	243.4	0.418	
106A	11.79	33.041	5.70	5.	0.14	0.4	284.4	150	9.64	33.617	4.12	25.953	206.2	0.475	
137A	9.89	33.439	4.67	8.	0.07	5.9	223.1	200	8.82	33.935	3.14	26.333	170.0	0.570	
169A	9.48	33.825	3.43	17.	0.00	13.5	188.1	250	8.18	34.010	2.96	26.492	155.0	0.654	
201A	8.8	33.935	3.14	26.	0.00	23.0	169.6	300	7.42	34.053	2.26	26.635	141.4	0.730	
261A	8.00	34.015	2.90	40.	0.00	28.0	152.1	400	6.24	34.108	1.34	26.838	122.1	0.867	
312A	7.26	34.064	2.05	51.	0.00	32.3	158.3	500	5.56	34.190	0.77	26.989	107.7	0.988	
390A	6.34	34.097	1.42	67.	0.00	36.1	124.0								
471A	5.70	34.173	0.84	80.	0.01	38.8	110.6								
553A	5.41	34.202	0.65	87.	0.01	39.1	105.1								

RV ALEJANDRO DE HUMBOLDT

CALCOFI CRUISE 7804

97080

LATITUDE 30 35.0N	LONGITUDE 120 31.0W	MO/DAY/YR 4/ 6/78	MESSANGER 1216	TIME GMT	BOTTOM 3950M	WIND 290	SPEED 14KT	WEATHER 1	DOMINANT WAVES						
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	16.19	33.051	5.80	3.	0.02	0.1	370.2	0	16.19	33.051	5.80	24.229	370.2	0.000	
11	16.19	33.050	5.80	3.	0.02	0.1	370.3	10	16.19	33.050	5.80	24.228	370.3	0.037	
35	16.17	33.071	5.86	3.	0.02	0.1	368.3	20	16.18	33.060	5.81	24.236	369.6	0.074	
65	15.07	32.976	5.98	3.	0.02	0.1	352.0	30	16.17	33.069	5.84	24.245	368.7	0.111	
75	13.85	33.102	6.07	3.	0.03	0.1	318.3	50	15.62	33.024	5.90	24.335	360.2	0.184	
95	12.47	33.128	5.88	5.	0.12	2.0	290.2	75	13.85	33.102	6.07	24.775	318.3	0.269	
109	11.44	33.094	5.71	7.	0.07	5.0	274.4	100	12.08	33.114	5.82	25.130	284.4	0.345	
124	10.82	33.182	5.48	10.	0.05	8.0	257.3	125	10.78	33.190	5.46	25.426	256.2	0.413	
154	9.89	33.370	4.93	16.	0.04	14.0	226.7	150	9.99	33.361	5.01	25.696	230.5	0.475	
174	9.56	33.559	4.49	19.	0.04	17.4	209.0	200	9.02	33.789	3.81	26.188	183.8	0.580	
204	8.93	33.819	3.71	26.	0.04	22.8	180.1	250	8.24	34.003	2.89	26.476	156.4	0.667	
238	8.36	33.986	2.96	35.	0.00	26.8	159.3	300	7.58	34.052	2.33	26.611	143.6	0.745	
268	8.07	34.010	2.83	39.	0.00	28.0	153.4	400	6.49	34.150	1.14	26.839	122.0	0.883	
318	7.30	34.076	2.00	51.	0.00	32.3	137.9	500	5.75	34.233	0.64	26.999	106.8	1.003	
382	6.65	34.134	1.28	63.	0.00	35.3	125.1	600	5.20	34.295	0.43	27.116	95.8	1.111	
481	5.88	34.214	0.72	78.	0.00	38.8	109.7								
568	5.35	34.283	0.43	89.	0.00	40.2	98.3								
643	5.03	34.297	0.42	95.	0.00	40.8	93.7								

A) THESE NANSEN BOTTLES PRETRIPPED CAUSING THE DEPTHS TO BE UNCERTAIN.

B) TEMPERATURE INFERRED FROM PRESSURE THERMOMETER AND WIRE DEPTH

RV ALEJANDRO DE HUMBOLDT

CALCOFI CRUISE 7804

97090

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
30 15.5N	121 10.5W	4/ 6/78	1823	GMT	3900M	250	10KT	1	320 7 7						
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	15.99	32.981	5.85	2.	0.04	0.0	371.0	0	15.99	32.981	5.85	24.221	371.0	0.000	
11	15.98	32.982	5.85	2.	0.05	0.0	370.7	10	15.98	32.982	5.85	24.224	370.7	0.037	
31	15.78	32.956	6.01	2.	0.05	0.0	368.4	20	15.92	32.983	5.92	24.235	369.7	0.074	
61	15.15	32.958	5.95	2.	0.05	0.0	355.0	30	15.80	32.962	6.00	24.247	368.5	0.111	
72	14.77	32.984	6.05	2.	0.05	0.0	345.3	50	15.44	32.957	5.96	24.325	361.1	0.184	
87	13.67	33.181	6.04	3.	0.05	0.0	308.9	75	14.58	33.030	6.05	24.565	338.3	0.272	
102	12.45	35.098	5.94	4.	0.10	2.0	292.1	100	12.61	35.110	5.96	25.026	294.1	0.352	
117	11.40	35.115	5.69	6.	0.09	5.1	272.1	125	10.82	35.170	5.50	25.404	258.3	0.421	
142	9.84	33.334	5.07	13.	0.05	12.9	230.1	150	9.64	33.419	4.88	25.798	220.9	0.482	
162	9.47	33.543	4.61	18.	0.05	16.7	208.8	200	8.82	33.887	4.05	26.295	173.6	0.582	
192	8.97	33.841	4.20	23.	0.05	20.2	179.1	250	8.06	34.023	2.84	26.518	152.5	0.666	
222	8.44	33.963	3.58	30.	0.00	24.1	162.2	300	7.44	34.080	2.07	26.653	139.6	0.741	
252	8.04	34.024	2.79	38.	0.00	28.1	151.9	400	6.50	34.172	1.04	26.856	120.4	0.876	
302	7.42	34.080	2.05	48.	0.00	31.3	159.2	500	6.08	34.295	0.41	27.007	106.0	0.996	
357	6.78	34.102	1.52	58.	0.00	34.6	129.1	600	5.58	34.325	0.35	27.094	97.8	1.105	
441	6.32	34.243	0.64	74.	0.00	37.2	112.8								
525	5.98	34.307	0.38	82.	0.00	38.7	103.9								
610	5.53	34.327	0.35	89.	0.00	39.7	97.1								

RV ALEJANDRO DE HUMBOLDT

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97100

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
29 55.0N	121 50.0W	4/ 7/78	0015	GMT	4100M	270	16KT	1	280 4 6						
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
0	16.89	33.256	5.69	2.	0.00	0.0	370.6	0	16.89	33.256	5.69	24.225	370.6	0.000	
9	16.88	33.254	5.72	3.	0.00	0.0	370.6	10	16.88	33.258	5.72	24.226	370.5	0.037	
40	16.99	33.359	5.73	3.	0.00	0.0	365.4	20	16.91	33.283	5.72	24.239	369.3	0.074	
67	17.03	33.459	5.73	4.	0.00	0.0	359.0	30	16.95	33.317	5.73	24.257	367.6	0.111	
86	16.92	33.493	5.72	4.	0.00	0.0	354.0	50	17.00	33.395	5.73	24.303	363.2	0.184	
98	15.85	33.545	5.81	5.	0.00	0.0	326.8	75	16.98	33.477	5.73	24.371	356.6	0.275	
111	14.57	33.514	5.77	6.	0.02	0.1	302.4	100	15.67	33.540	5.80	24.721	323.3	0.360	
128	12.72	33.404	5.60	8.	0.04	2.9	274.5	125	13.04	33.422	5.64	25.184	279.3	0.437	
145	11.33	33.456	5.34	12.	0.03	7.0	245.7	150	10.95	33.468	5.25	25.610	238.8	0.502	
171	9.68	33.541	4.73	20.	0.03	15.2	212.3	200	9.00	33.818	5.79	26.213	181.5	0.609	
192	9.13	33.776	4.00	28.	0.02	20.6	186.3	250	8.53	33.976	3.34	26.442	159.7	0.696	
213	8.84	33.856	3.55	33.	0.00	23.3	176.0	300	7.56	34.051	2.31	26.614	143.3	0.774	
243	8.44	33.956	3.50	37.	0.00	24.5	162.7	400	6.53	34.133	1.27	26.821	123.7	0.913	
277	7.88	34.030	2.65	48.	0.00	28.6	149.3	500	5.93	34.199	0.70	26.951	111.4	1.037	
320	7.30	34.058	2.10	55.	0.00	31.5	139.2								
380	6.62	34.104	1.45	69.	0.00	35.0	127.0								
455	6.32	34.196	0.87	71.	0.00	37.0	116.3								
532	5.55	34.202	0.65	82.	0.00	38.5	106.7								

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

100030

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
31 40.5N	116 46.5W	4/22/78	0331	GMT	399M	320	13KT	1	340 5 5						
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	14.87	33.379	6.30	0.37	2.	0.09	0.7	318.4	0	14.87	33.379	6.30	24.773	318.4	0.000
10	13.49	33.413	5.77	4.	0.24	2.8	288.4	10	13.49	33.413	5.77	25.088	288.4	0.030	
29	10.59	33.801	3.34	1.35	20.	0.11	18.8	207.7	20	11.80	33.600	4.47	25.561	243.4	0.057
43	10.16	33.951	2.86	1.66	25.	0.06	22.2	189.6	30	10.53	33.817	3.28	25.957	205.7	0.079
58	9.84	34.027	2.56	1.85	29.	0.08	24.2	178.8	50	10.00	33.997	2.68	26.190	183.6	0.119
72	9.56	34.036	2.60	1.80	30.	0.07	24.2	173.7	75	9.56	34.052	2.55	26.305	172.7	0.163
85	9.57	34.096	2.32	1.97	32.	0.03	25.7	169.4	100	9.55	34.148	2.03	26.382	165.4	0.206
104	9.54	34.156	1.97	2.12	35.	0.04	26.8	164.5	125	9.48	34.175	1.88	26.416	162.2	0.248
127	9.47	34.175	1.88	2.16	36.	0.08	27.4	162.0	150	9.34	34.203	1.76	26.460	157.9	0.288
154	9.31	34.207	1.74	2.22	38.	0.02	27.5	157.2	200	9.04	34.287	1.47	26.543	150.1	0.367
187	9.12	34.237	1.54	2.35	41.	0.02	28.2	152.0	250	8.64	34.255	1.26	26.613	143.5	0.443
219	8.90	34.255	1.38	2.44	43.	0.03	29.3	147.3	300	8.05	34.272	1.03	26.716	133.7	0.514
256	8.58	34.254	1.24	2.49	47.	0.02	30.6	142.6							
298	8.07	34.270	1.04	2.60	52.	0.04	32.3	134.1							
336	7.61	34.278	0.84	2.72	58.	0.06	34.1	127.1							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

100035

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
31 30.5N	117 07.0W	4/22/78	0725	GMT	1202M	320	10KT	1	340 5 5						
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	16.33	33.250	5.84	0.25	3.	0.1	358.7	0	16.33	33.250	5.84	24.350	358.7	0.000	
11	16.33	33.245	5.85	0.29	3.	0.1	359.1	10	16.35	33.248	5.85	24.346	359.1	0.036	
29	14.95	33.271	6.03	0.31	4.	0.1	327.9	20	15.82	33.259	5.95	24.471	347.2	0.071	
39	13.73	33.275	5.95	0.41	6.	0.6	303.2	30	14.84	33.273	6.02	24.696	325.7	0.105	
48	12.45	33.319	5.31	0.65	9.	4.2	275.8	50	12.22	33.330	5.21	25.272	270.9	0.	

RV DAVID STARR JORDAN

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100040

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES			
31 20.9N	117 27.1W	4/22/78	1051	GMT	1943M	310	15KT		02	SIGT	DT	DD
Z	T	S	02	PO4	SI03	N02	N03	DT	Z	T	S	02
1	16.11	33.269	5.30U	0.27	3.	0.0	352.6	0	16.11	33.269	5.77	24.414
11	16.11	33.269	5.77A	0.29	3.	0.0	352.6	10	16.11	33.271	5.77	24.414
29	14.81	33.242	6.12	0.31	3.	0.0	327.2	20	15.55	33.255	6.00	24.527
39	14.17	33.252	5.77	0.39	4.	0.3	313.6	30	14.76	33.245	6.08	24.692
48	13.05	33.273	5.87	0.55	6.	4.1	290.3	50	12.76	33.277	5.75	25.126
62	11.30	33.311	4.91	0.75	10.	6.7	255.9	75	10.76	33.409	4.88	25.601
77	10.72	33.424	4.87	1.06	15.	12.5	237.8	100	10.06	33.648	4.11	25.907
95	10.15	33.596	4.26	1.27	17.	16.4	215.7	125	9.73	33.853	3.38	26.123
119	9.82	33.815	3.56	1.63	24.	21.8	194.2	150	9.26	33.929	3.05	26.260
137	9.53	33.907	3.09	1.76	29.	23.5	182.8	200	8.83	34.119	2.09	26.477
165	8.98	33.952	3.00	1.89	31.	24.7	171.0	250	8.40	34.180	1.68	26.590
193	8.85	34.102	2.18	2.16	37.	27.9	157.9	300	7.92	34.220	1.35	26.695
221	8.72	34.145	1.93	2.21	40.	29.0	152.8	400	6.91	34.261	0.78	26.871
258	8.30	34.187	1.61	2.40	45.	31.0	143.5	500	6.26	34.314	0.39	27.000
314	7.79	34.227	1.28	2.58	55.	33.3	133.3					
384	7.01	34.246	0.87	2.72	63.	35.8	121.4					
454	6.60	34.304	0.51	2.89	71.	37.7	111.8					
531	6.01	34.317	0.37	3.02	80.	40.2	103.5					

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

100050

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES			
31 00.5N	118 07.0W	4/22/78	1635	GMT	1763M	310	15KT		1	310	8	5
Z	T	S	02	PO4	SI03	N02	N03	DT	Z	T	S	02
1	15.82	33.151	5.88	0.27	2.	0.0	355.0	0	15.82	33.151	5.88	24.389
10	15.78	33.149	5.96	0.31	3.	0.0	354.3	10	15.78	33.149	5.96	24.397
29	15.77	33.147	5.92	0.25	3.	0.0	354.2	20	15.77	33.150	5.94	24.397
53	14.80	33.142	6.03	0.28	3.	0.0	334.3	30	15.73	33.139	5.92	24.398
62	13.69	33.128	6.07	0.30	4.	0.2	313.2	50	14.92	33.145	6.01	24.558
72	13.14	33.166	5.90	0.36	5.	0.9	299.9	75	12.86	33.187	5.79	25.037
86	11.88	33.297	5.23	0.71	8.	7.2	267.1	100	11.39	33.542	4.19	25.592
100	11.39	33.542	4.19	1.07	14.	13.4	240.4	125	10.79	33.780	3.18	25.883
123	10.83	33.768	3.22	1.42	21.	18.6	214.2	150	10.34	33.874	2.91	26.035
141	10.52	33.842	3.01	1.66	23.	21.3	203.5	200	9.63	34.023	2.52	26.272
164	10.08	33.916	2.78	1.84	27.	23.1	190.9	250	9.01	34.131	2.05	26.456
192	9.71	34.001	2.59	1.90	29.	24.9	178.7	300	8.26	34.200	1.53	26.627
220	9.42	34.068	2.39	2.04	32.	26.4	169.2	400	7.06	34.233	0.98	26.828
257	8.91	34.142	1.98	2.07	37.	27.8	155.9	500	6.37	34.293	0.65	26.967
312	8.08	34.209	1.41	2.48	47.	32.4	138.7					
382	7.18	34.221	1.02	2.66	57.	35.4	125.5					
453	6.77	34.269	B	0.86	2.72	63.	36.3	116.6				
530	6.07	34.304	0.48	2.93	75.	39.6	105.2					

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

100060

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES			
30 40.5N	118 47.5W	4/22/78	2219	GMT	2791M	310	21KT		1	320	5	4
Z	T	S	02	PO4	SI03	N02	N03	DT	Z	T	S	02
1	16.30	33.119	5.86	0.26	2.	0.2	367.6	0	16.30	33.119	5.86	24.256
11	16.28	33.117	5.81	0.24	2.	0.1	367.3	10	16.28	33.117	5.81	24.259
31	16.15	33.116	5.83	0.24	3.	0.1	364.6	20	16.23	33.116	5.82	24.270
53	16.13	33.117	5.84	0.22	3.	0.1	364.1	30	16.16	33.116	5.83	24.286
62	15.34	33.064	5.95	0.23	3.	0.1	351.2	50	16.13	33.117	5.84	24.293
72	14.21	33.023	6.10	0.23	3.	0.1	331.1	75	13.98	33.033	6.11	24.693
86	13.26	33.081	6.14	0.25	4.	0.0	308.4	100	12.25	33.148	5.76	25.125
101	12.18	33.151	5.73	0.50	6.	3.9	283.2	125	10.99	33.310	5.10	25.484
125	10.99	33.310	5.10	0.84	10.	9.6	250.7	150	9.57	33.608	4.04	25.957
141	9.86	33.500	4.38	1.26	17.	17.2	218.1	200	8.88	33.331	3.28	26.321
167	9.33	33.776	3.56	1.67	26.	22.0	189.4	250	8.13	34.009	2.89	26.498
196	8.95	33.918	3.32	1.78	29.	24.3	173.1	300	7.48	34.044	2.40	26.620
223	8.46	33.976	3.08	1.88	33.	25.9	161.5	400	6.20	34.114	1.26	26.848
261	8.01	34.016	2.81	1.97	38.	27.8	152.1	500	5.74	34.218	0.64	26.989
319	7.22	34.054	2.17	2.30	49.	32.1	138.5					
389	6.29	34.102	1.35	2.64	64.	36.6	123.0					
459	5.89	34.175	0.87	2.66	74.	37.1	112.7					
535	5.65	34.253	0.48	2.96	82.	40.7	104.0					

A) DUE TO PROBLEMS ASSOCIATED WITH THE PICKLING OF THE OXYGEN SAMPLES, ALL CONCENTRATIONS ON THIS STATION HAVE BEEN ADJUSTED BY A FACTOR OF 1.56. MORE THAN THE NORMAL AMOUNT OF SCATTER CAN BE EXPECTED IN THIS DATA SET.

B) AN ERROR OF -0.001 IN THE CONDUCTIVITY RATIO, 0.039 PPT, HAS BEEN ASSUMED FOR THIS VALUE.

RV ALEJANDRO DE HUMBOLDT

CALCOFI CRUISE 7884

100080

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
30 01.0N	120 07.0W	4/ 7/78	1831	GMT	3400M	290	22KT	1	270	10	12				
Z	T	S	O2	P04	SI03	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	16.27	33.110	5.87	2.	0.00	0.0	367.6	0	16.27	33.110	5.87	24.256	367.6	0.000	
11	16.23	33.106	5.92	2.	0.00	0.0	367.1	10	16.23	33.109	5.92	24.262	367.1	0.037	
32	16.24	33.109	5.91	2.	0.00	0.0	367.1	20	16.23	33.107	5.92	24.263	367.0	0.074	
62	15.96	33.148	5.89	3.	0.00	0.0	358.2	30	16.24	33.109	5.91	24.262	367.1	0.110	
72	15.42	33.143	5.97	4.	0.00	0.0	347.1	50	16.07	33.135	5.90	24.318	361.7	0.183	
88	13.27	33.192	5.96	4.	0.08	0.0	300.4	75	15.02	33.151	5.97	24.565	338.2	0.271	
103	12.65	33.418	5.23	7.	0.05	1.0	272.2	100	12.75	33.375	5.39	25.208	277.0	0.349	
118	11.57	33.482	4.80	10.	0.03	4.2	248.0	125	11.21	33.522	4.65	25.607	239.0	0.414	
143	10.57	33.639	4.29	15.	0.03	11.7	219.4	150	10.41	33.703	4.08	25.889	212.2	0.571	
163	10.16	33.807	3.73	20.	0.01	17.0	200.2	200	9.15	33.892	3.70	26.248	178.1	0.570	
193	9.28	33.873	3.71	24.	0.01	19.9	181.4	250	8.34	33.978	3.50	26.441	159.8	0.657	
222	8.81	33.942	3.67	29.	0.00	22.5	169.2	300	7.39	34.027	2.62	26.620	142.8	0.735	
252	8.31	33.979	3.48	34.	0.00	25.2	159.1	400	6.75	34.171	1.14	26.821	123.7	0.873	
301	7.37	34.027	2.60	47.	0.00	33.0	142.5	500	5.91	34.248	0.62	26.992	107.5	0.995	
355	7.20	34.113	1.71	56.	0.00	37.0	133.8	600	5.45	34.297	0.44	27.087	98.5	1.105	
439	6.32	34.210	0.79	72.	0.00	44.1	115.3								
524	5.78	34.257	0.60	81.	0.00	46.3	105.2								
611	5.41	34.301	0.42	88.	0.00	47.5	97.7								

RV ALEJANDRO DE HUMBOLDT

CALCOFI CRUISE 7804

100090

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
29 40.5N	120 47.0W	4/ 7/78	1115	GMT	3926M	340	18KT	5	270	10	12				
Z	T	S	O2	P04	SI03	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
0	16.82	33.363	5.65	2.	0.00	0.0	361.3	0	16.82	33.363	5.65	24.323	361.3	0.000	
10	16.81	33.359	5.67	2.	0.00	0.0	361.3	10	16.81	33.359	5.67	24.322	361.3	0.036	
29	16.82	33.364	5.72	2.	0.00	0.0	361.2	20	16.82	33.364	5.70	24.323	361.3	0.072	
57	16.71	33.405	5.69	2.	0.00	0.0	355.8	30	16.82	33.367	5.72	24.326	361.0	0.109	
67	16.13	33.395	5.75	3.	0.00	0.0	343.8	50	16.74	33.397	5.70	24.366	357.1	0.181	
81	13.93	33.232	5.89	4.	0.06	0.2	310.3	75	14.93	33.305	5.84	24.700	325.3	0.266	
95	12.36	33.161	5.79	6.	0.08	2.3	285.8	100	11.95	33.153	5.75	25.186	279.0	0.342	
109	11.52	33.153	5.64	8.	0.02	5.1	267.9	125	10.41	33.231	5.28	25.524	247.0	0.409	
132	10.08	33.282	5.09	14.	0.02	12.2	237.8	150	9.38	33.454	5.56	25.862	214.8	0.467	
151	9.35	33.454 A	4.53	19.	0.01	17.7	213.6	200	8.70	33.930	3.55	26.348	168.6	0.565	
178	9.05	33.810	3.77	25.	0.02	21.7	182.6	250	7.86	34.009	2.92	26.538	150.5	0.646	
206	8.60	33.944	3.51	31.	0.01	23.8	166.0	300	7.18	34.052	2.20	26.668	138.2	0.721	
233	8.15 B	33.988	3.18	36.	0.01	26.1	156.2	400	6.34	34.136	1.18	26.848	121.2	0.856	
278	7.42	34.035	2.48	47.	0.01	29.9	142.6	500	5.74	34.243	0.54	27.008	105.9	0.975	
329	6.93	34.071	1.88	56.	0.01	32.9	133.4								
407	6.29	34.142	1.12	69.	0.00	36.5	120.0								
487	5.81	34.230	0.60	82.	0.00	38.8	107.6								
570	5.45	34.301	0.39	90.	0.00	39.8	98.1								

RV ALEJANDRO DE HUMBOLDT

CALCOFI CRUISE 7804

100100

LATITUDE	LONGITUDE	MO/DAY/YR	MESSANGER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
29 20.0N	121 26.5W	4/ 7/78	0527	GMT	4000M	320	15KT	5	270	10	12				
Z	T	S	O2	P04	SI03	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	16.73	33.162	5.70	4.	0.03	0.0	373.9	0	16.73	33.162	5.70	24.190	373.9	0.000	
11	16.72	33.160	5.72	4.	0.02	0.0	373.9	10	16.72	33.162	5.72	24.191	373.9	0.037	
30	16.39	33.100	5.78	4.	0.04	0.0	371.0	20	16.58	33.134	5.75	24.202	372.7	0.075	
40	16.30	33.097	5.76	4.	0.03	0.0	369.2	30	16.39	33.100	5.78	24.221	371.0	0.112	
54	15.85	33.055	5.81	3.	0.03	0.0	362.6	50	15.99	33.068	5.79	24.266	364.8	0.186	
68	15.55	33.072	5.86	3.	0.03	0.0	355.0	75	15.24	33.150	5.87	24.515	343.0	0.275	
92	14.16	33.304	5.91	4.	0.03	0.0	309.6	100	13.46	33.261	5.86	24.974	299.2	0.356	
111	12.55	33.210	5.75	5.	0.09	2.5	285.6	125	11.88	33.348	5.50	25.550	263.5	0.427	
129	11.74	33.397	5.43	7.	0.	5.4	257.3	150	11.00	33.543	5.19	25.662	233.8	0.490	
148	11.10	33.536	5.22	9.	0.03	0.0	235.9	200	9.28	33.765	4.27	26.127	189.6	0.597	
175	9.79	33.605	4.79	15.	0.07	14.1	209.2	250	8.18	33.997	3.38	26.481	156.0	0.686	
207	9.18	33.812	4.12	22.	0.04	19.6	184.4	300	7.49	34.021	2.77	26.601	144.6	0.763	
234	8.45 B	33.963	3.58	31.	0.04	24.1	162.4	400	6.44	34.104	1.50	26.810	124.8	0.903	
279	7.80	34.009	3.08	40.	0.04	26.0	149.7	500	5.70	34.223	0.71	26.996	106.9	1.025	
329	7.09	34.035	2.33	50.	0.04	31.3	138.2								
407	6.39	34.111	1.43	65.		35.8	123.5								
488	5.77	34.211	0.74	79.		38.0	108.6								
571	5.41	34.270	0.56	87.		39.5	100.0								

A) AN ERROR OF -0.02 IN THE CONDUCTIVITY RATIO, 0.781 PPT, HAS BEEN ASSUMED FOR THIS VALUE.

B) TEMPERATURE, GOOD TO 0.05 DEGREES, INFERRED FROM PRESSURE THEROMETER AND WIRE DEPTH.

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

103030

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
31 06.0N	116 24.5W	4/23/78	1913	GMT	63M	290	8KTT	1	290	5	7				
Z	T	S	02	P04	SI03	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
0	12.92	33.712	7.38	0.81	7.	2.3	255.6	0	12.92	33.712	7.38	25.433	255.6	0.000	
10	11.64	33.715	4.69	1.48	15.	14.6	232.1	10	11.64	33.715	4.69	25.680	232.1	0.024	
19	10.68	33.791	3.42	1.75	20.	19.3	210.0	20	10.62	33.802	3.40	25.930	208.3	0.046	
29	10.33	33.887	3.17	1.95	23.	21.8	197.1	30	10.31	33.898	3.14	26.059	196.0	0.067	
48	10.08	34.007	2.70	2.14	27.	23.9	184.1	50	10.07	34.012	2.67	26.190	183.6	0.105	

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

103035

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
30 56.0N	116 45.0W	4/23/78	1600	GMT	1849M	310	15KTT	1	300	5	6				
Z	T	S	02	P04	SI03	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
0	16.45	33.258	5.95	0.24	2.	0.1	360.8	0	16.45	33.258	5.95	24.328	360.8	0.000	
10	16.36	33.256	5.97	0.26	2.	0.1	358.9	10	16.36	33.256	5.97	24.347	358.9	0.036	
28	14.52	33.222	6.10	0.31	3.	0.1	322.8	20	16.02	33.254	6.04	24.423	351.7	0.072	
37	13.56	33.222	6.12	0.37	4.	0.4	303.8	30	14.27	33.223	6.10	24.778	317.9	0.105	
47	12.57	33.235	5.75	0.53	6.	4.2	284.2	50	12.17	33.269	5.54	25.233	274.6	0.165	
61	10.96	33.434	4.74	0.88	7.	10.6	291.0	75	10.80	33.634	4.08	25.769	223.6	0.227	
75	10.80	33.634	4.08	1.16	16.	15.4	223.6	100	10.46	33.779	3.55	25.940	207.3	0.282	
93	10.60	33.752	3.63	1.32	19.	18.0	211.5	125	9.94	33.902	3.14	26.126	189.7	0.332	
117	10.09	33.844	3.31	1.55	23.	21.5	196.3	150	9.47	34.051	2.63	26.319	171.3	0.378	
135	9.76	33.974	2.91	1.74	28.	23.7	181.4	200	8.98	34.142	2.15	26.469	157.1	0.461	
164	9.25	34.098	2.42	2.00	34.	26.5	164.3	250	8.34	34.180	1.79	26.600	144.7	0.539	
192	9.08	34.134	2.20	2.11	36.	27.7	159.0	300	7.99	34.240	1.27	26.700	135.2	0.611	
220	8.71	34.154	2.03	2.16	39.	29.1	152.0	400	6.98	34.303	0.63	26.895	116.7	0.743	
258	8.25	34.187	1.72	2.33	45.	31.2	142.8	500	6.25	34.337	0.40	27.019	105.0	0.860	
314	7.91	34.256	1.12	2.52	51.	33.3	132.9								
384	7.13	34.295	0.70	2.71	62.	36.0	119.3								
455	6.52	34.323	0.47	2.86	71.	38.6	109.3								
531	6.11	34.342	0.38	2.96	78.	40.8	102.8								

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

103040

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
30 46.0N	117 04.5W	4/23/78	1215	GMT	1763M	320	14KTT	1	300	5	5				
Z	T	S	02	P04	SI03	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
3	16.29	33.240	5.82	0.19	3.	0.1	358.6	0	16.29	33.240	5.82	24.351	358.6	0.000	
11	16.28	33.238	5.83	0.18	3.	0.1	358.5	10	16.28	33.240	5.83	24.352	358.5	0.036	
30	16.16	33.232	5.83	0.17	3.	0.1	356.4	20	16.22	33.237	5.83	24.363	357.5	0.072	
40	15.72	33.231	5.95	0.18	3.	0.1	347.0	30	16.16	33.232	5.83	24.375	356.4	0.107	
49	14.33	33.222	6.13	0.19	3.	0.1	319.0	50	14.23	33.225	6.12	24.788	317.0	0.175	
63	13.21	33.244	5.76	0.40	5.	2.3	295.5	75	12.02	33.311	5.21	25.295	268.7	0.249	
76	11.92	33.317	5.16	0.76	9.	7.9	266.3	100	10.68	33.610	4.09	25.770	223.5	0.311	
94	10.73	33.534	4.30	1.10	15.	14.4	229.8	125	10.42	33.836	3.31	25.993	202.4	0.364	
118	10.53	33.760	3.55	1.38	20.	17.8	209.8	150	10.02	33.986	2.82	26.178	184.8	0.414	
136	10.22	33.937	2.98	1.66	24.	21.8	191.6	200	9.11	34.146	2.14	26.452	158.7	0.501	
164	9.80	34.007	2.73	1.85	29.	22.9	179.6	250	8.54	34.173	1.83	26.563	148.2	0.580	
192	9.20	34.135	2.20	2.11	35.	27.1	160.8	300	8.07	34.238	1.27	26.686	136.5	0.654	
219	8.94	34.149	2.06	2.19	38.	28.0	155.8	400	6.73	34.240	0.77	26.878	118.3	0.787	
257	8.45	34.178	1.77	2.29	43.	29.6	146.4	500	6.14	34.317	0.42	27.017	105.1	0.905	
314	7.94	34.253	1.12	2.53	51.	32.5	133.5								
382	6.87	34.225	0.87	2.70	63.	36.3	121.1								
452	6.45	34.290	0.49	2.65	72.	34.4	110.9								
531	5.92	34.325	0.37	2.93	80.	40.2	101.8								

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

103050

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
30 26.0N	117 44.5W	4/23/78	0540	GMT	2602M	340	10KTT	1	300	5	5				
Z	T	S	02	P04	SI03	N02	N03	DT	Z	T	S	02	SIGT	DT	DD
1	16.05	33.210	5.85	0.25	2.	0.1	355.6	0	16.05	33.210	5.85	24.383	355.6	0.000	
10	16.00	33.207	5.82	0.26	2.	0.1	354.7	10	16.00	33.207	5.82	24.392	354.7	0.036	
29	15.87	33.207	5.85	0.23	2.	0.1	351.9	20	15.93	33.207	5.83	24.407	353.2	0.071	
53	15.86	33.206	5.84	0.26	2.	0.1	351.8	30	15.87	33.207	5.85	24.421	351.9	0.106	
63	15.32	33.198	5.94	0.27	3.	0.1	341.0	50	15.86	33.206	5.88	24.422	351.8	0.177	
72	14.15	33.174	6.07	0.23	3.	0.1	318.9	75	13.91	33.185	6.03	24.825	313.5	0.260	
86	13.11	33.246	5.65	0.47	5.	3.0	293.4	100	11.61	33.375	4.90	25.422	256.6	0.332	
100	11.61	33.375	4.90	0.77	10.	9.5	256.6	125	10.34	33.547	4.35	25.781	222.5	0.393	
124	10.36	33.534	4.39	1.09	15.	14.0	223.7	150	9.93	33.826	3.32	26.068	195.2	0.446	
142	10.09	33.738	3.66	1.34	20.	19.1	204.2	200	9.46	34.071	2.27	26.337	169.6	0.539	
165	9.65	33.958	2.76	1.79	29.	23.6	180.9	250	8.16	34.047	2.58	26.524	151.9	0.621	
193	9.50	34.050	2.36	1.95	52.	25.5	171.7	300	7.22	34.065	2.19	26.673	137.7	0.696	
221	9.19	34.103	2.14	2.05	35.	27.0	163.0	400	6.93	34.259	0.69	26.866	119.5	0.830	
258	7.85	34.029	2.71	2.01	41.	27.5	148.9	500	5.99	34.308	0.34	27.028	104.1	0.948	
314															

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

107032

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT	WAVES					
30 25.8N	116 11.0W	4/24/78	0141	GMT	482M	330	10Kt	1	290	3 7					
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
2	13.90	33.624	8.79	0.37	1.	0.5	280.9	0	13.90	33.624	8.79	25.166	280.9	0.000	
10	12.38	33.595	6.67	0.58	4.	3.2	254.2	10	12.38	33.595	6.67	25.447	254.2	0.027	
30	11.11	33.592	4.19	1.12	14.	15.3	231.9	20	11.80	33.595	5.06	25.557	243.7	0.052	
43	10.70	33.750	3.60	1.40	19.	19.5	213.3	30	11.11	33.592	4.19	25.682	231.9	0.076	
53	10.33	33.987	2.73	2.22U	26.	24.2	189.7	50	10.43	33.920	2.98	26.055	196.4	0.119	
67	10.27	34.066	2.40	1.85	28.	24.9	182.9	75	10.08	34.086	2.41	26.245	178.4	0.166	
81	9.93	34.093	2.42	1.98	30.	26.3	175.4	100	9.80	34.145	2.19	26.339	169.5	0.210	
95	9.79	34.114	2.34	2.06	31.	26.9	171.6	125	9.82	34.273	1.50	26.436	160.3	0.251	
118	9.83	34.250	1.61	2.27	36.	28.6	162.1	150	9.73	34.311	1.29	26.480	156.1	0.292	
136	9.78	34.295	1.39	2.40	38.	29.9	158.0	200	9.51	34.351	1.05	26.567	149.7	0.370	
165	9.67	34.319	1.21	2.25	40.	31.6	154.5	250	8.96	34.349	0.93	26.634	141.4	0.445	
192	9.59	34.345	1.09	2.37	41.	33.2	151.3	300	8.46	34.339	0.83	26.705	134.7	0.517	
224	9.22	34.357	0.94	2.45	44.	33.9	144.6	400	7.80	34.340	0.58	26.807	125.1	0.653	
275	8.73	34.337	0.93	2.57	47.	34.8	138.7								
325	8.22	34.342	0.72	2.72	54.	35.8	130.9								
380	7.93	34.339	0.63	2.84	56.	36.7	127.0								

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

107035

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT	WAVES					
30 21.5N	116 22.5W	4/24/78	0358	GMT	1757M	330	10Kt	1	290	3 7					
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	15.96	33.269	6.11	0.20	3.	0.03	0.1	349.3	0	15.96	33.269	6.11	24.448	349.3	0.000
11	14.92	33.282	6.33	0.22	2.	0.00	0.1	326.5	10	15.02	33.283	6.31	24.666	328.6	0.034
29	15.27	33.287	5.94	0.35	5.	0.04	1.2	293.5	20	14.12	33.284	6.14	24.859	310.2	0.066
39	12.06	33.353	5.30	0.66	9.	0.17	7.0	266.2	30	15.14	33.294	5.88	25.064	290.7	0.096
48	11.41	33.407	4.81	0.85	11.	0.17	10.5	250.7	50	11.29	33.419	4.75	25.513	248.0	0.150
62	10.83	33.516	4.43	0.97	14.	0.09	12.2	232.8	75	10.81	33.755	3.75	25.860	214.9	0.208
76	10.81	33.770	3.70	1.24	18.	0.01	17.0	213.7	100	10.36	33.875	3.30	26.032	198.6	0.260
95	10.48	33.837	3.44	1.38	21.	0.00	18.8	203.2	125	10.02	34.074	2.54	26.246	178.3	0.308
118	10.03	34.020	2.74	1.71	27.	0.02	23.6	182.4	150	9.89	34.201	2.02	26.367	166.8	0.352
136	10.01	34.140	2.26	1.89	31.	0.00	25.0	173.2	200	9.39	34.282	1.55	26.513	153.0	0.434
165	9.73	34.241	1.84	2.07	35.	0.00	26.7	161.2	250	8.79	34.307	1.26	26.628	142.0	0.510
193	9.51	34.280	1.57	2.20	37.	0.01	28.0	154.9	300	8.26	34.300	1.01	26.707	134.6	0.581
220	9.05	34.281	1.51	2.31	42.	0.00	29.6	147.7	400	7.11	34.306	0.69	26.879	118.2	0.714
258	8.74	34.312	1.19	2.42	45.	0.01	30.8	140.7	500	6.40	34.336	0.43	26.997	107.0	0.833
314	8.08	34.292	0.97	2.53	51.	0.00	32.9	132.6							
383	7.25	34.301	0.74	2.63	60.	0.00	35.1	120.5							
454	6.72	34.320	0.53	2.77	68.	0.03	37.2	112.1							
530	6.21	34.346	0.37	2.93	76.	0.00	40.2	103.8							

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

107040

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT	WAVES					
30 11.0N	116 42.0W	4/24/78	0740	GMT	2697M	300	16Kt	1	290	3 7					
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	16.39	33.254	5.76	0.26	3.	0.1	359.7	0	16.39	33.254	5.76	24.339	359.7	0.000	
11	16.38	33.250	5.79	0.26	3.	0.1	359.8	10	16.38	33.251	5.79	24.339	359.7	0.036	
29	16.13	33.232	5.82	0.24	2.	0.1	355.7	20	16.26	33.243	5.81	24.360	357.8	0.072	
39	14.54	33.232	6.30	0.25	3.	0.1	322.4	30	15.99	33.234	5.88	24.413	352.6	0.108	
48	13.41	33.223	5.97	0.35	4.	0.9	300.8	50	13.17	33.231	5.86	25.010	295.9	0.173	
62	11.96	33.299	5.20	0.69	7.	7.5	268.4	75	11.19	33.410	4.74	25.524	246.9	0.241	
76	11.15	33.417	4.71	0.94	11.	12.1	245.5	100	10.25	33.628	4.32	25.860	215.0	0.299	
95	10.44	33.575	4.50	1.04	13.	14.3	222.0	125	9.75	33.864	3.37	26.127	189.6	0.350	
118	9.74	33.805	3.60	1.37	21.	20.3	193.6	150	9.57	33.991	2.81	26.256	177.3	0.397	
137	9.78	33.936	3.04	1.62	24.	23.4	184.6	200	9.56	34.250	1.66	26.460	158.0	0.482	
165	9.34	34.048	2.56	1.87	30.	25.5	169.4	250	8.96	34.294	1.21	26.593	145.4	0.560	
193	9.59	34.225	1.79	2.11	34.	26.6	160.2	300	8.07	34.272	1.05	26.712	134.0	0.633	
221	9.36	34.288	1.38	2.24	37.	29.4	151.9	400	7.28	34.302	0.61	26.850	120.9	0.766	
258	8.83	34.294	1.19	2.32	41.	30.5	143.4	500	6.45	34.322	0.38	26.980	108.7	0.888	
314	7.85	34.265	0.99	2.55	53.	34.0	131.3								
385	7.40	34.300	0.64	2.71	59.	36.7	122.5								
453	6.85	34.303	0.51	2.67	66.	35.2	115.0								
528	6.21	34.338	0.29	2.91	75.	40.8	104.4								

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

107050

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
29 50.7N	117 22.0W	4/24/78	1328	GMT	2416M	330	12KT	1	310 4 4						
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	16.21	33.166	5.80	0.36	3.	0.1	362.3	0	16.21	33.166	5.80	24.313	362.3	0.000	
10	16.21	33.161	5.82	0.36	3.	0.0	362.6	10	16.21	33.161	5.82	24.309	362.6	0.036	
29	16.21	33.186	5.84	0.35	3.	0.0	360.8	20	16.21	33.172	5.83	24.316	362.0	0.073	
38	16.12	33.178	5.82	0.36	3.	0.0	359.4	30	16.20	33.187	5.84	24.330	360.6	0.109	
47	15.58	33.140	5.96	0.33	3.	0.0	350.7	50	15.50	33.143	5.97	24.453	348.8	0.180	
62	14.87	33.145	5.99	0.37	3.	0.0	335.5	75	12.90	33.115	5.98	24.976	299.1	0.261	
75	12.90	33.115	5.98	0.48	4.	1.1	299.1	100	10.81	33.301	5.12	25.508	248.5	0.330	
94	10.86	33.159	5.43	0.79	9.	7.7	259.7	125	10.47	35.691	4.19	25.870	214.0	0.389	
118	10.65	33.636	4.29	1.16	15.	14.2	220.9	150	9.89	33.854	3.56	26.096	192.5	0.440	
135	10.19	33.739	4.08	1.32	18.	17.1	205.7	200	9.13	34.061	2.59	26.383	165.3	0.531	
164	9.67	33.950	3.05	1.83	29.	23.0	181.8	250	8.49	34.159	1.98	26.560	148.5	0.612	
190	9.31	34.042	2.65	1.92	31.	25.4	169.4	300	7.92	34.212	1.38	26.687	136.4	0.686	
219	8.80	34.088	2.49	2.03	36.	27.2	158.2	400	6.94	34.254	0.74	26.861	119.9	0.819	
256	8.44	34.170	1.87	2.25	43.	29.5	146.8	500	6.22	34.315	0.40	27.005	106.3	0.939	
311	7.79	34.215	1.29	2.50	52.	33.2	134.2								
380	7.11	34.240	0.84	2.66	61.	35.9	123.1								
450	6.56	34.288	0.53	2.85	70.	38.0	112.5								
525	6.07	34.325	0.36	2.97	79.	40.2	103.6								

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

110035

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
29 46.0N	116 00.0W	4/25/78	0440	GMT	1298M	330	10KT	2	310 4 4						
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	15.15	33.457	6.51	0.24	1.	0.1	318.5	0	15.15	33.457	6.51	24.772	318.5	0.000	
11	14.63	33.470	6.57	0.22	1.	0.1	306.8	10	14.68	33.471	6.56	24.882	308.0	0.031	
30	13.52	33.478	5.64	0.37	3.	0.9	284.2	20	14.27	33.472	6.32	24.970	299.6	0.062	
39	12.11	33.527	4.59	0.77	9.	8.8	254.3	30	13.52	33.478	5.64	25.132	284.2	0.091	
49	11.55	33.623	4.15	1.05	14.	13.4	237.3	50	11.50	33.641	4.08	25.648	235.1	0.143	
63	10.92	33.845	3.19	1.38	21.	17.5	210.0	75	10.71	33.931	2.90	26.016	200.1	0.198	
77	10.68	33.938	2.88	1.57	23.	20.5	199.1	100	10.06	34.007	2.72	26.187	183.9	0.246	
96	10.17	34.006	2.70	1.70	26.	22.5	185.7	125	9.54	34.025	2.75	26.288	174.3	0.292	
119	9.61	34.005	2.81	1.72	28.	23.4	176.8	150	9.22	34.076	2.58	26.380	165.6	0.335	
138	9.41	34.067	2.61	1.89	31.	25.2	169.1	200	8.74	34.156	2.03	26.519	152.3	0.416	
166	8.98	34.080	2.52	2.00	35.	26.1	161.5	250	8.72	34.311	1.08	26.644	140.5	0.491	
194	8.79	34.142	2.12	2.15	38.	27.9	154.1	300	8.27	34.341	0.73	26.746	130.9	0.562	
222	8.60	34.209	1.65	2.24	43.	29.8	146.3	400	7.18	34.333	0.46	26.890	117.2	0.692	
259	8.75	34.339	0.92	2.44	48.	30.4	138.9	500	6.49	34.348	0.33	26.996	107.1	0.811	
314	8.05	34.343	0.66	2.66	55.	33.6	128.4								
384	7.34	34.330	0.50	2.73	63.	35.6	119.5								
454	6.71	34.342	0.36	2.80	71.	37.2	110.3								
525	6.42	34.349	0.31	2.87	75.	38.2	106.1								

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

110040

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
29 33.0N	116 21.0W	4/25/78	0040	GMT	2089M	310	12KT	2	310 3 4						
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	15.35	33.285	6.38	0.21	2.	0.1	335.2	0	15.35	33.285	6.38	24.596	335.2	0.000	
10	14.57	33.306	6.84	0.19	1.	0.1	317.6	10	14.57	33.306	6.84	24.781	317.6	0.033	
29	13.37	33.246	6.04	0.29	3.	1.0	298.4	20	14.01	33.286	6.58	24.882	308.0	0.064	
38	12.20	33.230	5.60	0.52	6.	5.3	277.8	30	13.23	33.244	5.99	25.008	296.1	0.094	
48	11.76	33.293	5.27	0.67	9.	7.7	265.3	50	11.66	33.307	5.20	25.360	262.5	0.150	
61	11.17	33.395	4.81	0.87	12.	11.4	247.5	75	11.00	33.587	4.17	25.697	230.4	0.212	
75	11.00	33.587	4.17	1.07	15.	13.0	230.4	100	10.46	33.877	3.23	26.017	200.1	0.267	
94	10.56	33.824	3.42	1.35	20.	19.5	205.5	125	10.15	33.996	2.76	26.163	186.2	0.315	
116	10.25	33.970	2.86	1.65	25.	22.8	189.6	150	9.86	34.055	2.55	26.258	177.1	0.362	
135	10.05	34.014	2.69	1.79	27.	29.3	183.1	200	9.22	34.236	1.73	26.504	153.7	0.446	
162	9.71	34.095	2.40	1.99	32.	25.8	171.7	250	8.36	34.231	1.82	26.637	141.1	0.522	
191	9.41	34.241	1.72	2.21	38.	29.2	156.2	300	7.99	34.254	1.13	26.710	134.2	0.593	
218	8.83	34.205	1.76	2.21	41.	29.8	150.0	400	7.07	34.282	0.65	26.865	119.5	0.726	
255	8.30	34.257	1.36	2.40	48.	32.2	139.8	500	6.29	34.315	0.37	26.995	107.2	0.846	
310	7.94	34.255	1.09	2.58	52.	33.7	133.3								
379	7.24	34.275	0.73	2.79	61.	37.2	122.3								
449	6.69	34.296	0.49	2.79	70.	37.3	113.5								
525	6.10	34.324	0.32	2.95	79.	41.6	104.1								

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

110050

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT WAVES						
29 14.9N	116 58.2W	4/24/78	1834	GMT	3169M	300	14KT	1	310 4 4						
Z	T	S	O2	P04	S103	N02	N03	DT	Z	T	S	O2	SIGT	DT	DD
1	16.68	33.283	5.82	0.20	2.	0.03	0.1	364.0	0	16.68	33.283	5.82	24.294	364.0	0.000
10	16.64	33.280	5.85	0.18	2.	0.03	0.0	363.3	10	16.64	33.280	5.85	24.301	363.3	0.036
29	16.61	33.280	5.86	0.18	2.	0.03	0.0	362.7	20	16.62	33.282	5.86	24.303	363.0	0.073
52	16.24	33.267</													

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

113035

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT	WAVES					
29 12.0N	115 38.0W	4/25/78	1457	GMT	1298M	260	11KTT	1	300	3 4					
Z	T	S	02	P04	SI03	N02	N03	DT	Z	T	S	02	SI07	DT	DD
1	15.75	33.347	6.07	0.40	1.	0.5	339.2	0	15.75	33.347	6.07	24.555	339.2	0.000	
9	15.73	33.345	6.07	0.28	1.	0.3	338.9	10	15.70	33.345	6.08	24.565	338.2	0.034	
29	15.18	33.342	6.24	0.22	1.	0.1	327.5	20	15.43	33.345	6.22	24.625	332.5	0.067	
38	14.09	33.320	6.09	0.26	1.	0.1	307.0	30	15.09	33.340	6.22	24.694	325.9	0.100	
48	12.45	33.382	5.11	0.59	7.	6.3	273.1	50	12.51	33.394	5.06	25.305	267.8	0.160	
62	11.85	33.455	0.81	10.		9.9	254.9	75	11.24	33.584	4.38	25.650	234.9	0.223	
76	11.19	33.592	4.35	1.04	13.	14.4	233.3	100	10.01	33.769	4.03	26.011	200.7	0.278	
94	10.00	33.713	4.19	1.24	18.	18.0	204.6	125	9.95	33.912	3.26	26.131	189.2	0.327	
117	10.02	33.859	3.49	1.46	22.	20.9	194.1	150	9.65	34.066	2.59	26.301	173.1	0.373	
136	9.83	33.980	2.96	1.71	26.	24.8	182.1	200	8.92	34.191	1.91	26.517	152.5	0.457	
163	9.46	34.125	2.31	2.02	34.	27.4	165.5	250	8.86	34.300	1.21	26.614	143.4	0.533	
191	8.92	34.153	2.09	2.22	38.	31.0	155.2	300	8.48	34.328	0.91	26.693	135.8	0.605	
218	8.93	34.250	1.53	2.39	42.	32.2	148.2	400	7.33	34.311	0.59	26.851	120.8	0.739	
256	8.83	34.304	1.18	2.51	45.	33.3	142.6	500	6.41	34.332	0.34	26.994	107.3	0.860	
310	8.38	34.328	0.86	2.67	51.	35.3	134.2								
379	7.57	34.311	0.65	2.83	58.	39.1	124.0								
449	6.82	34.316	0.45	2.83	68.	38.7	113.7								
526	6.24	34.342	0.30	3.08	76.	45.0	104.4								

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

113040

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT	WAVES					
29 02.8N	115 58.3W	4/25/78	1817	GMT	1856M	270	16KTT	1	280	4 4					
Z	T	S	02	P04	SI03	N02	N03	DT	Z	T	S	02	SI07	DT	DD
0	15.84	33.337	5.99	0.18	1.	0.00	0.1	341.8	0	15.84	33.337	5.99	24.527	341.8	0.000
10	15.71	33.343	6.15	0.16	1.	0.00	0.1	338.6	10	15.71	33.343	6.15	24.561	338.6	0.034
28	14.33	33.314	6.26	0.18	1.	0.00	0.1	312.2	20	14.99	33.328	6.21	24.706	328.8	0.067
38	13.87	33.312	6.12	0.22	2.	0.00	0.1	303.2	30	14.25	33.316	6.25	24.856	310.5	0.099
47	13.09	33.299	5.77	0.35	4.	0.16	2.2	289.2	50	12.85	33.310	5.60	25.135	288.0	0.159
61	12.10	33.366	4.99	0.54	8.	0.30	5.4	266.0	75	11.48	33.439	4.47	25.494	249.8	0.226
76	11.45	33.445	4.43	0.77	11.	0.09	9.9	248.6	100	10.81	33.801	3.40	25.895	211.6	0.284
94	11.01	33.731	3.49	1.07	17.	0.00	15.8	220.0	125	9.90	33.919	3.31	26.145	187.8	0.334
118	10.17	33.920	3.14	1.40	23.	0.02	21.1	192.0	150	9.31	33.920	3.51	26.244	178.5	0.381
137	9.50	33.900	3.60	1.41	24.	0.00	21.1	182.8	200	8.93	34.102	2.46	26.447	159.2	0.467
165	9.21	33.961	3.21	1.60	29.	0.09	22.5	173.8	250	8.58	34.220	1.61	26.624	142.4	0.545
193	9.03	34.076	2.62	1.78	33.	0.05	25.7	162.6	300	8.01	34.257	1.20	26.709	134.3	0.616
221	8.63	34.166	2.01	2.11	40.	0.00	29.0	149.9	400	7.35	34.308	0.67	26.846	121.4	0.750
258	8.33	34.228	1.53	2.30	46.	0.03	30.8	140.9	500	6.29	34.332	0.42	27.009	105.9	0.870
314	7.92	34.261	1.12	2.46	51.	0.00	32.8	132.6							
384	7.57	34.308	0.72	2.52	57.	0.00	33.0	124.3							
454	6.60	34.306	0.54	2.65	70.	0.00	36.2	111.6							
529	6.23	34.354	0.35	2.88	77.	0.02	39.6	103.4							

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113050

LATITUDE	LONGITUDE	MO/DAY/YR	MESSENDER	TIME	BOTTOM	WIND	SPEED	WEATHER	DOMINANT	WAVES					
28 41.5N	116 36.0W	4/26/78	0026	GMT	3358M	280	16KTT	0	290	3 4					
Z	T	S	02	P04	SI03	N02	N03	DT	Z	T	S	02	SI07	DT	DD
3	17.12	33.344	5.86	0.16	3.	0.1	369.4	0	17.12	33.344	5.86	24.238	369.4	0.000	
11	17.00	33.343	5.83	0.13	3.	0.1	366.7	10	17.02	33.343	5.83	24.261	367.2	0.037	
31	16.66	33.312	5.87	0.13	3.	0.1	361.4	20	16.85	33.331	5.85	24.290	366.4	0.073	
53	14.46	33.349	6.11	0.15	1.	0.1	312.3	30	16.68	33.316	5.87	24.318	361.7	0.110	
62	13.56	33.385	5.59	0.33	8.	3.0	291.8	50	14.82	33.340	6.08	24.753	320.3	0.178	
71	12.92	33.414	5.07	0.56	7.	6.2	277.5	75	12.69	33.433	4.94	25.260	272.0	0.253	
85	12.13	33.469	4.75	0.75	9.	9.7	258.9	100	11.06	33.493	4.65	25.609	238.8	0.317	
98	11.19	33.488	4.65	0.87	12.	12.3	241.0	125	10.21	33.609	4.35	25.851	215.8	0.375	
122	10.25	33.579	4.44	1.06	15.	15.7	218.5	150	10.02	33.844	3.53	26.067	195.3	0.427	
141	10.06	33.768	3.81	1.29	20.	19.4	201.8	200	8.96	34.059	2.64	26.407	163.0	0.518	
165	9.85	33.943	3.12	1.54	25.	22.9	185.2	250	8.19	34.097	2.36	26.557	148.7	0.598	
192	9.09	34.046	2.68	1.80	32.	26.3	165.7	300	7.38	34.101	1.94	26.679	137.2	0.672	
220	8.71	34.070	2.60	1.90	36.	27.4	158.2	400	6.92	34.272	0.67	26.877	118.4	0.805	
258	8.05	34.102	2.28	2.06	43.	29.4	146.3	500	6.36	34.343	0.36	27.006	106.0	0.924	
313	7.22	34.103	1.62	2.33	53.	33.9	134.8								
385	7.00	34.254	0.77	2.64	63.	36.7	120.7								
455	6.60	34.312	0.48	2.80	72.	37.9	111.2								
529	6.22	34.356	0.30	2.88	80.	39.8	103.0								

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

10 METER DATA

			Z	T	S	02	P04	S103	N02	N03	DT
60.050	04/19/78	1458GMT 37 57.5N 122 53.1W BOTTOM 47M WIND 170 14KT WEATHER 6 DOMINANT WAVES 260 03 05	10	13.09	32.044	6.33	0.45	4.	0.04	0.2	381.4
60.052 ⁵	04/19/78	1644GMT 37 52.5N 123 03.5W BOTTOM 90M WIND 200 13KT WEATHER 1 DOMINANT WAVES 250 05 05	10	12.87	32.415	5.48	0.69	4.	0.23	1.7	350.0
63.050	04/19/78	1054GMT 37 23.3N 122 27.8W BOTTOM 28M WIND 090 06KT WEATHER DOMINANT WAVES	10	12.64	32.865	5.67	0.63	7.	0.23	3.9	312.7
66.049	04/18/78	0927GMT 36 53.0N 122 01.7W BOTTOM 24M WIND 350 11KT WEATHER DOMINANT WAVES	10	13.58	32.587	6.29	0.58	3.	0.04	0.3	350.8
70.051	04/18/78	0356GMT 36 11.3N 121 43.9W BOTTOM 121M WIND 350 10KT WEATHER 1 DOMINANT WAVES 160 02 07	10	12.64	33.048	6.08	1.00	11.	0.22	4.5	299.2
70.065	04/17/78	1609GMT 35 43.0N 122 45.0W BOTTOM 1849M WIND 350 04KT WEATHER 1 DOMINANT WAVES 290 05 06	10	14.14	32.851	6.08					343.8
73.050	04/16/78	1536GMT 35 37.0N 121 17.0W BOTTOM 104M WIND 070 06KT WEATHER 1 DOMINANT WAVES 300 05 05	10	12.78	32.989	6.12	0.64	8.	0.19	2.9	306.1
73.065	04/17/78	0239GMT 35 08.0N 122 19.0W BOTTOM 3825M WIND 300 12KT WEATHER 1 DOMINANT WAVES 260 05 05	10	14.29		6.08	0.40	5.	0.02	0.1	
77.048	04/16/78	1112GMT 35 08.3N 120 43.7W BOTTOM 28M WIND 080 10KT WEATHER DOMINANT WAVES	10	12.62	33.162	6.40	0.59	4.	0.16	1.7	290.5
77.065	04/15/78	1930GMT 34 34.0N 121 55.0W BOTTOM 3731M WIND 190 26KT WEATHER 6 DOMINANT WAVES 190 06 05	10	14.46	33.019	6.05	0.50	5.	0.01	0.1	336.4
80.051	04/19/78	1722GMT 34 26.0N 120 32.6W BOTTOM 121M WIND 210 04KT WEATHER 1 DOMINANT WAVES 290 03 05	10	12.42	33.266	5.25	0.34	13.	0.31	7.2	279.1
83.040 ⁶	04/13/78	1848GMT 34 12.5N 119 24.2W BOTTOM 35M WIND 260 06KT WEATHER 2 DOMINANT WAVES 270 02 05	10	13.86	33.285	5.81	0.56	8.	0.25	2.3	305.0
87.032 ⁵	04/10/78	0748GMT 33 53.5N 118 26.5W BOTTOM 21M WIND 180 02KT WEATHER 1 DOMINANT WAVES	10	14.13	33.292	5.57	0.65	13.	0.11	2.8	309.8
87.032 ⁷	04/10/78	0849GMT 33 54.5N 118 28.0W BOTTOM 35M WIND 170 04KT WEATHER 1 DOMINANT WAVES	10	15.18	33.243	5.95	0.37	10.	0.02	0.6	334.8
87.033	04/10/78	0952GMT 33 53.9N 118 29.0W BOTTOM 50M WIND 160 04KT WEATHER 1 DOMINANT WAVES	10	15.17	33.235	6.02	0.34	9.	0.00	0.5	335.1
87.034	04/10/78	1113GMT 33 52.0N 118 33.2W BOTTOM 73M WIND 130 03KT WEATHER 1 DOMINANT WAVES	10	14.40	33.230	5.86	0.42	8.	0.02	0.6	319.8
87.035	04/10/78	1242GMT 33 50.0N 118 37.8W BOTTOM 57M WIND 260 06KT WEATHER 1 DOMINANT WAVES 240 02 04	10	15.14	33.162	6.20	0.33	6.	0.00	0.2	339.9
87.055	04/11/78	2055GMT 33 10.0N 120 00.0W BOTTOM 1202M WIND 310 17KT WEATHER 2 DOMINANT WAVES 310 03 08	10	14.52	33.238	6.05	0.45	4.	0.01	0.0	321.6
90.027 ⁶	04/09/78	0220GMT 33 29.0N 117 45.5W BOTTOM 50M WIND 070 10KT WEATHER 1 DOMINANT WAVES 090 02 06	10	16.52	32.939	6.55	1.44	5.	0.04	0.1	385.6
90.028	04/09/78	0356GMT 33 28.5N 117 46.7W BOTTOM 464M WIND 080 06KT WEATHER 1 DOMINANT WAVES	10	16.49	32.943	6.30	0.27	2.	0.02	0.0	384.6
90.029	04/09/78	0543GMT 33 27.0N 117 49.5W BOTTOM 630M WIND 110 06KT WEATHER 1 DOMINANT WAVES	10	16.06	33.123	6.07	1.05	4.	0.00	0.1	362.1
90.030	04/09/78	0719GMT 33 25.0N 117 53.5W BOTTOM 621M WIND 160 08KT WEATHER 1 DOMINANT WAVES	10	16.07	33.096	6.11	0.22	3.	0.00	0.0	364.3
90.031	04/09/78	1007GMT 33 23.0N 117 57.7W BOTTOM 460M WIND 220 05KT WEATHER 1 DOMINANT WAVES	10	15.70	33.120	6.14	0.29	3.	0.03	0.0	354.7
93.026 ⁷	03/30/78	0319GMT 32 57.0N 117 17.4W BOTTOM 37M WIND 180 07KT WEATHER 1 DOMINANT WAVES 160 01 06	10	17.04	33.051	6.03	0.23	7.	0.06	0.0	388.9

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

10 METER DATA

	Z	T	S	02	P04	S103	N02	N03	DT
93.026 ⁹ 03/30/78 0423GMT 32 56.7N 117 18.4W BOTTOM 69M WIND 170 05KT WEATHER 1 DOMINANT WAVES	10	17.08	33.052	6.03	0.54	7.	0.06	0.0	389.7
93.028 03/30/78 0601GMT 32 54.7N 117 21.8W BOTTOM 574M WIND 180 06KT WEATHER 1 DOMINANT WAVES	10	17.05	33.089	5.96	0.13	6.	0.02	0.1	386.4
93.035 03/30/78 1440GMT 32 40.5N 117 51.5W BOTTOM 539M WIND 120 10KT WEATHER 1 DOMINANT WAVES 220 04 05	10	15.56	33.264	5.94		3.	0.00	0.1	341.2
93.045 03/31/78 0052GMT 32 20.0N 118 32.0W BOTTOM 1202M WIND 090 15KT WEATHER 2 DOMINANT WAVES 100 03 05	10	15.48	33.270	5.94	0.74	3.	0.01	0.0	339.1
93.055 03/31/78 1049GMT 32 00.0N 119 13.5W BOTTOM 1392M WIND 210 18KT WEATHER 1 DOMINANT WAVES	10	15.89	33.154	5.78	0.61	6.	0.00	0.2	356.2

RV ALEJANDRO DE HUMBOLDT

CALCOFI CRUISE 7804

10 METER DATA

	Z	T	S	02	P04	S103	N02	N03	DT
97.029 04/04/78 2220GMT 32 17.5N 117 04.7W BOTTOM 38M WIND 260 06KT WEATHER 1 DOMINANT WAVES 260 03 05	10	16.83	33.126 A	6.13	0.75	4.	0.04	0.0	378.8
97.032 04/05/78 0203GMT 32 12.0N 117 15.2W BOTTOM 1367M WIND 310 17KT WEATHER 1 DOMINANT WAVES 310 03 04	10	16.67	33.129 A	5.83	0.68	3.	0.00	0.0	375.0
97.045 04/05/78 1345GMT 31 46.0N 118 08.5W BOTTOM 1857M WIND 320 09KT WEATHER 1 DOMINANT WAVES 320 06 05	10	15.56	33.180 A	5.88	0.82	1.	0.02	0.0	347.3
97.055 04/05/78 2040GMT 31 25.5N 118 49.5W BOTTOM 925M WIND 320 19KT WEATHER 1 DOMINANT WAVES 290 05 06	10	16.22	33.190 A	5.80		2.			360.7

RV DAVID STARR JORDAN

CALCOFI CRUISE 7804

10 METER DATA

	Z	T	S	02	P04	S103	N02	N03	DT
100.029 04/22/78 0219GMT 31 42.0N 116 43.4W BOTTOM 112M WIND 300 14KT WEATHER 1 DOMINANT WAVES 260 05 05	10	11.14	33.745	4.02	1.11	17.	0.14	15.7	221.2
100.045 04/22/78 1337GMT 31 10.5N 117 46.5W BOTTOM 1485M WIND 300 16KT WEATHER 1 DOMINANT WAVES 310 08 05	10	15.62	33.168	5.84	0.26	3.		0.1	349.5
103.029 04/23/78 2013GMT 31 07.0N 116 21.0W BOTTOM 30M WIND 290 05KT WEATHER 1 DOMINANT WAVES 290 04 07	10	11.70	33.735	4.81	1.37	16.		13.7	231.6
103.045 04/23/78 0901GMT 30 36.0N 117 24.0W BOTTOM 2135M WIND 320 14KT WEATHER 1 DOMINANT WAVES	10	16.17	33.243	5.82	0.19	3.		0.1	355.8
107.031 04/24/78 0026GMT 30 27.8N 116 07.0W BOTTOM 41M WIND 310 13KT WEATHER 0 DOMINANT WAVES 260 03 07	10	12.64	33.603	6.68	0.88	3.		1.6	258.4
107.045 04/24/78 1028GMT 30 01.5N 117 02.0W BOTTOM 1485M WIND 300 18KT WEATHER 1 DOMINANT WAVES	10	16.44	33.280	5.85	0.37	3.		0.2	358.9
110.032 ⁴ 04/25/78 0645GMT 29 51.2N 115 49.7W BOTTOM 47M WIND 290 13KT WEATHER 2 DOMINANT WAVES	10	12.14	33.646	5.29	0.66	6.		5.8	246.1
110.045 04/24/78 2135GMT 29 26.5N 116 39.5W BOTTOM 1670M WIND 300 11KT WEATHER 1 DOMINANT WAVES 310 04 04	10	16.56	33.269	5.80	0.27	3.	0.04	0.1	362.4
113.029 04/25/78 1126GMT 29 24.5N 115 13.5W BOTTOM 26M WIND 320 11KT WEATHER 1 DOMINANT WAVES	10	12.70	33.728	5.12	0.88	13.		9.3	250.3
113.030 04/25/78 1219GMT 29 22.0N 115 18.0W BOTTOM 60M WIND 010 09KT WEATHER 1 DOMINANT WAVES 290 03 05	10	12.86	33.707	4.97	1.12	15.		11.0	254.8
113.045 04/25/78 2125GMT 28 52.0N 116 18.0W BOTTOM 2135M WIND 280 19KT WEATHER 0 DOMINANT WAVES 270 03 04	10	16.78	33.302	5.92	0.17	2.	0.01	0.1	364.8

A) THESE SALINITY SAMPLES WERE ANALYZED ASHORE SIX WEEKS AFTER THE TIME OF COLLECTION.

RV DAVID STARR JORDAN

CHLOROPHYLL-A AND PHAEOPHYTIN

CALCOFI CRUISE 7804

	DEPTH	CHL A	PHAEO		DEPTH	CHL A	PHAEO		DEPTH	CHL A	PHAEO
STATION 60055	0	0.47	0.18	STATION 60060	2	0.35	0.15	STATION 63052	0	0.66	0.19
04/19/78	10	0.66	0.33	04/19/78	11	0.52	0.20	04/19/78	10	0.55	0.23
1852 GMT	24	0.59	0.34	2236 GMT	30	0.54	0.28	0930 GMT	19	0.49	0.16
	33	0.46	0.25		40	0.79	0.47		29	0.60	0.20
37 47.0N	43	0.30	0.13	37 37.0N	49	0.37	0.17	37 19.0N	47	0.34	0.25
123 15.0W	57	0.15	0.11	123 37.0W	63	0.14	0.13	122 36.0W	70	0.17	0.41
	71	0.12	0.28		77	0.11	0.08				
	95	0.07	0.27		96	0.05	0.02				
					119	0.04	0.07				
					138	0.07	0.14				
					166	0.03	0.04				
					193	0.02	0.04				
STATION 63055	1	0.18	0.42	STATION 63060	1	0.13	0.07	STATION 67050	0	0.26	0.20
04/19/78	10	0.26	0.20	04/19/78	10	0.16	0.12	04/18/78	10	0.30	0.16
0641 GMT	29	0.51	0.12	0135 GMT	30	0.99	0.59	1108 GMT	28	1.15	0.53
	43	0.32	0.27		39	0.69	0.57		42	0.79	0.28
37 13.0N	52	0.16	0.09	37 03.0N	50	0.66	0.33	36 48.0N	56	0.32	0.25
122 50.0W	66	0.06	0.12	123 12.0W	63	0.26	0.16	122 05.0W	70	0.06	0.15
	80	0.05	0.11		78	0.17	0.51		84	0.07	0.18
	99	0.06	0.06		96	0.05	0.15		102	0.06	0.41
	123	0.02	0.10		120	0.02	0.08		125	0.09	0.13
	142	0.03	0.09		137	0.05	0.10		152	0.14	0.07
	175	0.03	0.08		165	0.02	0.12		184	0.07	0.17
	203	0.05	0.09		193	0.03	0.09		214	0.03	0.10
STATION 67055	1	0.17	0.04	STATION 67060	0	0.09	0.03	STATION 70053	2	0.44	0.18
04/18/78	11	0.15	0.05	04/18/78	10	0.10	0.04	04/18/78	11	0.69	0.26
1444 GMT	30	0.14	0.09	1837 GMT	28	0.15	0.04	0145 GMT	28	1.05	0.72
	39	0.69	0.24		37	0.16	0.05		57	0.85	0.90
36 39.0N	49	1.02	0.34	36 28.0N	47	0.38	0.17	36 06.5N	46	0.53	0.56
122 26.0W	63	0.55	0.00	122 47.0W	61	0.68	0.25	121 54.0W	59	0.34	0.61
	78	0.22	0.00		75	0.30	0.10		72	0.18	0.21
	96	0.07	0.04		117	0.02	0.03		89	0.13	0.25
	120	0.01	0.04		136	0.00	0.02		111	0.06	0.16
	138	0.01	0.04						129	0.05	0.24
	166	0.05	0.05						155	0.03	0.10
	193	0.03	0.09						181	0.02	0.11
STATION 70060	1	0.09	0.03	STATION 70070	1	0.12	0.04	STATION 73053	1	0.47	0.14
04/17/78	11	0.09	0.03	04/17/78	10	0.12	0.04	04/16/78	10	0.60	0.07
1937 GMT	30	0.11	0.02	1320 GMT	29	0.13	0.04	1817 GMT	29	0.66	0.37
	39	0.12	0.04		38	0.13	0.04		39	0.76	0.41
35 53.0N	49	0.26	0.07	35 33.0N	48	0.29	0.00	35 31.4N	53	0.33	0.31
122 22.5W	63	0.61	0.28	123 06.0W	62	0.63	0.20	121 28.6W	67	0.22	0.16
	76	0.26	0.12		75	0.34	0.23		90	0.11	0.11
	96	0.07	0.07		94	0.11	0.06		109	0.06	0.11
	119	0.01	0.04		117	0.02	0.02		128	0.05	0.14
	138	0.00	0.04		136	0.01	0.02		146	0.05	0.15
	166	0.01	0.04		163	0.01	0.03		174	0.02	0.11
	194	0.02	0.06		191	0.00	0.03		207	0.02	0.08
STATION 73060	1	0.06	0.06	STATION 73070	1	0.07	0.02	STATION 77051	1	0.79	0.00
04/16/78	11	0.09	0.02	04/17/78	10	0.09	0.01	04/16/78	10	0.45	0.22
2325 GMT	30	0.10	0.03	0618 GMT	29	0.08	0.02	0853 GMT	28	0.85	0.68
	39	0.10	0.04		38	0.11	0.01		42	0.45	0.41
35 17.5N	49	0.18	0.08	34 58.0N	47	0.11	0.04	35 02.0N	51	0.54	0.30
121 57.9W	63	0.55	0.23	122 40.0W	61	0.18	0.06	120 56.5W	65	0.24	0.06
	77	0.19	0.16		75	0.38	0.35		79	0.09	0.09
	96	0.07	0.09		94	0.21	0.12		97	0.07	0.10
	119	0.00	0.08		117	0.03	0.02		120	0.04	0.09
	137	0.01	0.08		136	0.02	0.01		139	0.02	0.07
					164	0.01	0.01		172	0.02	0.09
									200	0.03	0.14
STATION 77055	1	0.24	0.07	STATION 77060	2	0.28	0.06	STATION 77070	1	0.18	0.02
04/16/78	11	0.23	0.08	04/16/78	11	0.24	0.07	04/15/78	10	0.21	0.00
0445 GMT	30	0.33	0.16	0000 GMT	31	0.52	0.21	1614 GMT	29	0.26	0.09
	39	0.66	0.21		40	0.82	0.46		38	0.29	0.13
34 54.5N	48	0.50	0.17	34 44.0N	49	0.53	0.30	34 25.0N	47	0.50	0.27
121 13.0W	62	0.28	0.23	121 34.0W	64	0.14	0.15	122 16.0W	62	0.46	0.22
	76	0.19	0.13		78	0.16	0.10		76	0.34	0.26
	95	0.14	0.07		96	0.06	0.10		95	0.16	0.15
	118	0.07	0.04		120	0.03	0.08		119	0.03	0.07
	136	0.02	0.06		139	0.04	0.08		138	0.01	0.08
	164	0.02	0.05		165	0.02	0.06		166	0.01	0.05
	191	0.02	0.06		192	0.02	0.07		194	0.01	0.06

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	DEPTH	CHL A	PHAEOT		DEPTH	CHL A	PHAEOT		DEPTH	CHL A	PHAEOT
STATION 80052	0	2.87	0.63	STATION 80055	0	1.08	0.32	STATION 80060	0	2.67	0.42
04/14/78	11	1.74	0.66	04/14/78	9	0.69	0.47	04/15/78	10	2.08	0.53
1856 GMT	30	0.39	0.42	2227 GMT	28	1.08	0.71	0315 GMT	28	2.07	0.69
44	0.13	0.31		37	0.59	0.71		37	2.08	1.07	
34 24.8N	54	0.11	0.36	34 19.0N	46	0.53	0.54	34 09.0N	46	1.18	1.46
120 36.0W	68	0.06	0.25	120 48.0W	59	0.22	0.33	121 10.0W	59	0.43	0.38
	82	0.04	0.15		75	0.15	0.28		75	0.24	0.56
101	0.05	0.15			91	0.13	0.24		91	0.39	0.19
124	0.05	0.18			113	0.09	0.26		114	0.10	0.40
143	0.03	0.13			131	0.08	0.13		132	0.03	0.11
172	0.05	0.11			157	0.06	0.19		159	0.02	0.10
196	0.03	0.09			185	0.08	0.15		186	0.04	0.06
STATION 80070	1	0.15	0.03	STATION 82047	1	2.01	0.00	STATION 83042	0	1.05	0.41
04/15/78	10	0.14	0.05	04/14/78	10	2.08	0.65	04/13/78	10	1.08	0.45
0953 GMT	29	0.18	0.07	1320 GMT	29	0.66	0.37	1700 GMT	29	0.62	0.36
38	0.37	0.18			43	0.21	0.23		38	0.28	0.38
33 48.5N	47	0.69	0.28	34 16.5N	52	0.17	0.17	34 10.0N	52	0.24	0.44
121 51.0W	61	0.27	0.14	119 59.0W	66	0.09	0.18	119 29.5W	66	0.16	0.35
75	0.14	0.10			80	0.12	0.08		80	0.07	0.20
94	0.07	0.07			94	0.06	0.12		98	0.06	0.15
117	0.02	0.05			117	0.06	0.13		121	0.03	0.11
135	0.02	0.04			135	0.07	0.12		144	0.03	0.10
163	0.00	0.04			163	0.07	0.11				
191	0.02	0.04			191	0.05	0.08				
STATION 83051	0	0.30	0.11	STATION 83055	1	1.96	0.07	STATION 83060	1	0.27	0.07
04/13/78	10	0.28	0.14	04/13/78	10	1.96	0.00	04/13/78	10	0.39	0.09
1137 GMT	29	1.68	0.61	0824 GMT	29	2.81	1.55	0400 GMT	29	0.79	0.22
43	1.22	0.50			38	1.31	0.65		39	0.76	0.31
33 52.0N	52	0.72	0.30	33 44.0N	47	0.79	0.41	33 34.3N	48	0.46	0.31
120 08.5W	66	0.54	0.24	120 24.5W	61	0.47	0.44	120 45.0W	62	0.41	0.32
81	0.40	0.26			75	0.30	0.12		76	0.23	0.18
99	0.24	0.30			93	0.13	0.15		95	0.11	0.13
123	0.12	0.13			116	0.16	0.13		118	0.06	0.11
142	0.13	0.18			134	0.22	0.07		137	0.05	0.15
172	0.07	0.06			162	0.07	0.12		165	0.06	0.02
195	0.08	0.11			190	0.12	0.16		192	0.02	0.05
STATION 83070	0	0.11	0.02	STATION 87036	1	0.32	0.11	STATION 87040	1	0.29	0.00
04/12/78	9	0.11	0.02	04/11/78	11	0.35	0.12	04/11/78	10	0.18	0.03
2110 GMT	28	0.15	0.04	0257 GMT	30	1.38	0.28	0812 GMT	30	0.58	0.00
37	0.23	0.10			39	1.18	0.39		39	1.55	0.13
33 14.5W	47	0.33	0.09	33 49.0N	49	0.59	0.20	33 40.0N	49	1.91	0.38
121 26.0W	60	0.66	0.25	118 40.0W	63	0.28	0.09	118 58.0W	63	0.49	0.20
74	0.23	0.18			77	0.09	0.03		77	0.17	0.08
93	0.17	0.30			96	0.03	0.03		96	0.08	0.03
116	0.09	0.17			120	0.06	0.07		119	0.03	0.05
135	0.02	0.03			136	0.04	0.05		138	0.05	0.01
162	0.01	0.03			166	0.04	0.04		166	0.07	0.01
190	0.00	0.03			194	0.03	0.03		193	0.04	0.05
STATION 87045	1	0.55	0.00	STATION 87050	1	0.54	0.24	STATION 87060	0	0.14	0.03
04/11/78	11	0.38	0.16	04/11/78	11	0.79	0.26	04/12/78	10	0.17	0.02
1246 GMT	30	3.96	0.67	1653 GMT	20	0.72	0.32	0614 GMT	29	0.38	0.05
39	1.22	0.66		33 20.0N	30	5.05	1.60		38	0.72	0.14
33 30.0N	48	0.29	0.13	119 39.5W	49	0.45	0.40	33 00.0N	48	0.85	0.35
119 19.0W	62	0.12	0.08					120 21.5W	62	0.34	0.24
77	0.07	0.07							76	0.23	0.10
95	0.04	0.07							95	0.09	0.06
119	0.02	0.04							118	0.03	0.05
137	0.02	0.03							137	0.02	0.02
165	0.04	0.03							165	0.01	0.02
193	0.02	0.02							193	0.01	0.01
STATION 87070	2	0.16	0.01	STATION 90033	1	0.55	0.04	STATION 90037	1	0.44	0.07
04/12/78	11	0.17	0.00	04/09/78	10	0.56	0.00	04/09/78	10	0.38	0.08
1406 GMT	30	0.15	0.02	1329 GMT	30	0.40	0.18	1742 GMT	29	0.16	0.06
39	0.20	0.03			40	1.51	0.12		39	0.92	0.22
32 39.6N	49	0.28	0.05	33 18.5N	48	2.67	1.31	33 11.0N	49	1.71	0.46
121 02.0W	63	0.89	0.30	118 07.0W	62	0.63	0.31	118 22.5W	63	0.85	0.31
77	0.39	0.22			77	0.21	0.37		77	0.22	0.20
95	0.18	0.04			95	0.03	0.14		96	0.08	0.08
119	0.03	0.02			118	0.02	0.05		118	0.02	0.05
137	0.02	0.02			136	0.01	0.05		138	0.02	0.06
165	0.00	0.02			164	0.02	0.06		165	0.01	0.04
193	0.00	0.02			192	0.00	0.11		193	0.02	0.04

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	DEPTH	CHL A	PHAEQ		DEPTH	CHL A	PHAEQ		DEPTH	CHL A	PHAEQ
STATION 90045	1	0.58	0.12	STATION 90053	1	0.20	0.05	STATION 90060	1	0.12	0.02
04/09/78	10	0.52	0.13	04/08/78	11	0.18	0.06	04/08/78	10	0.11	0.03
2338 GMT	29	0.92	0.24	1412 GMT	29	0.17	0.08	0815 GMT	57	0.19	0.10
	38	4.46	1.01		53	0.23	0.10		66	0.34	0.23
32 54.5N	48	1.39	0.75	32 39.0N	62	0.44	0.15	32 25.0N	80	0.27	0.26
118 55.5W	62	0.46	0.14	119 29.0W	72	0.39	0.19	119 57.5W	94	0.16	0.10
	75	0.22	0.22		86	0.27	0.18		108	0.11	0.07
	94	0.12	0.16		100	0.13	0.12		132	0.04	0.03
	117	0.07	0.10		123	0.03	0.07		150	0.02	0.04
	135	0.15	0.12		142	0.01	0.04		179	0.02	0.01
	162	0.10	0.07						207	0.02	0.02
	190	0.09	0.16								
STATION 90070	2	0.08	0.01	STATION 90080	1	0.11	0.03	STATION 90090	2	0.10	0.00
04/08/78	11	0.08	0.01	04/07/78	10	0.12	0.02	04/07/78	11	0.10	0.00
0153 GMT	30	0.08	0.01	1937 GMT	29	0.15	0.01	1235 GMT	31	0.10	0.00
	53	0.12	0.01		53	0.16	0.03		40	0.11	0.00
32 04.5N	62	0.43	0.16	31 44.5N	62	0.27	0.08	31 22.3N	49	0.14	0.02
120 38.3W	71	0.35	0.23	121 19.5W	71	0.51	0.25	122 01.4W	64	0.30	0.12
	85	0.23	0.15		85	0.33	0.23		78	0.47	0.19
	99	0.17	0.08		99	0.23	0.08		96	0.21	0.10
	122	0.06	0.02		123	0.07	0.04		120	0.07	0.02
	141	0.03	0.01		142	0.03	0.01		138	0.06	0.00
	164	0.01	0.02		165	0.01	0.01		166	0.02	0.00
	192	0.03	0.01		192	0.01	0.01		193	0.04	0.00
STATION 90100	3	0.06	0.00	STATION 90110	1	0.05	0.01	STATION 90120	1	0.07	0.00
04/07/78	12	0.07	0.00	04/06/78	10	0.05	0.00	04/06/78	11	0.06	0.00
0546 GMT	31	0.07	0.00	2330 GMT	29	0.06	0.00	1740 GMT	29	0.07	0.01
	41	0.08	0.00		39	0.07	0.00		39	0.08	0.00
31 02.0N	50	0.08	0.01	30 45.1N	48	0.08	0.01	30 25.1N	48	0.07	0.02
122 42.2W	64	0.12	0.01	123 19.9W	62	0.10	0.00	123 59.9W	62	0.15	0.00
	77	0.29	0.04		76	0.19	0.04		77	0.16	0.04
	97	0.39	0.19		94	0.55	0.06		94	0.43	0.15
	120	0.24	0.15		118	0.25	0.13		118	0.29	0.19
	139	0.07	0.03		136	0.18	0.01		136	0.16	0.07
	167	0.07	0.00		164	0.05	0.01		164	0.02	0.02
	194	0.02	0.02		191	0.01	0.01		192	0.02	0.00
STATION 90130	0	0.06	0.00	STATION 90140	1	0.05	0.01	STATION 90150	0	0.06	0.00
04/06/78	10	0.05	0.01	04/06/78	11	0.06	0.01	04/05/78	10	0.06	0.01
1126 GMT	29	0.06	0.00	0540 GMT	30	0.06	0.01	2305 GMT	38	0.07	0.01
	40	0.07	0.00		38	0.07	0.01		61	0.10	0.01
30 04.1N	48	0.08	0.01	29 45.1N	49	0.06	0.02	29 23.0N	80	0.12	0.03
124 37.8W	63	0.10	0.01	125 19.6W	65	0.11	0.00	125 59.8W	94	0.15	0.04
	77	0.15	0.01		77	0.12	0.05		108	0.25	0.16
	96	0.45	0.03		94	0.17	0.10		127	0.27	0.18
	119	0.27	0.16		118	0.20	0.13		145	0.13	0.07
	138	0.10	0.04		137	0.11	0.08		169	0.04	0.01
	166	0.04	0.02		164	0.05	0.03		192	0.00	0.03
	194	0.01	0.01		193	0.03	0.00		216	0.00	0.02
STATION 90160	1	0.07	0.01	STATION 90170	0	0.03	0.01	STATION 90180	1	0.06	0.01
04/05/78	10	0.06	0.02	04/05/78	9	0.07	0.01	04/05/78	11	0.11	0.05
1630 GMT	39	0.07	0.01	1058 GMT	28	0.06	0.01	0427 GMT	41	0.05	0.01
	62	0.09	0.01		38	0.05	0.01		65	0.07	0.01
29 05.1N	81	0.10	0.03	28 45.1N	47	0.05	0.01	28 25.1N	82	0.08	0.01
126 38.8W	95	0.13	0.06	127 17.3W	61	0.09	0.00	127 57.4W	97	0.11	0.02
	109	0.19	0.09		75	0.06	0.01		111	0.13	0.03
	129	0.29	0.16		94	0.07	0.01		130	0.51	0.09
	146	0.17	0.05		117	0.12	0.00		150	0.17	0.06
	170	0.07	0.02		136	0.15	0.10		172	0.07	0.03
	193	0.04	0.00		164	0.09	0.05		196	0.03	0.00
	216	0.01	0.01		193	0.03	0.01		220	0.01	0.00
STATION 90190	0	0.06	0.01	STATION 90200	1	0.05	0.01	STATION 93040	1	0.24	0.05
04/04/78	10	0.06	0.01	04/04/78	10	0.07	0.00	03/30/78	10	0.26	0.04
2223 GMT	38	0.07	0.01	1627 GMT	39	0.06	0.01	1954 GMT	29	0.32	0.09
	60	0.08	0.02		63	0.07	0.01		38	0.76	0.11
28 05.1N	80	0.10	0.01	27 45.1N	81	0.09	0.02	32 30.0N	47	0.45	0.18
128 36.5W	94	0.12	0.03	129 15.5W	96	0.09	0.03	118 11.5W	61	0.24	0.15
	108	0.17	0.04		110	0.12	0.04		75	0.08	0.10
	127	0.17	0.09		126	0.13	0.08		93	0.10	0.00
	145	0.18	0.10		147	0.19	0.12		116	0.02	0.07
	169	0.17	0.08		170	0.08	0.04		135	0.02	0.03
	192	0.07	0.04		193	0.03	0.01		162	0.01	0.04
	216	0.02	0.02		217	0.01	0.02		190	0.02	0.03
STATION 93050	2	0.14	0.00	STATION 93060	1	0.15	0.00	STATION 93070	2	0.10	0.00
03/31/78	11	0.11	0.01	03/31/78	10	0.12	0.01	04/01/78	12	0.06	0.00
0631 GMT	30	0.12	0.04	1552 GMT	29	0.15	0.04	0137 GMT	30	0.10	0.00
	41	0.21	0.06		38	0.23	0.00		54	0.15	0.02
32 10.0N	50	0.24	0.08	31 50.4N	48	0.26	0.00	31 30.0N	63	0.22	0.06
118 53.0W	64	0.36	0.09	119 33.7W	62	0.26	0.10	120 14.0W	73	0.25	0.09
	78	0.17	0.12		76	0.32	0.04		88	0.23	0.14
	97	0.15	0.11		95	0.17	0.09		102	0.23	0.11
	120	0.05	0.05		118	0.10	0.06		125	0.09	0.06
	139	0.03	0.09		137	0.06	0.05		143	0.03	0.04
	167	0.00	0.04		165	0.02	0.05		167	0.00	0.02
	195	0.01	0.03		193	0.00	0.01				

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	DEPTH	CHL A	PHAEAO		DEPTH	CHL A	PHAEAO		DEPTH	CHL A	PHAEAO
STATION 93080	1	0.07	0.05	STATION 93090	1	0.10	0.01	STATION 93100	1	0.08	0.01
04/01/78	11	0.06	0.01	04/01/78	10	0.10	0.01	04/01/78	11	0.08	0.00
0858 GMT	30	0.07	0.01	1507 GMT	29	0.10	0.01	2120 GMT	30	0.08	0.01
39	0.07	0.01		38	0.11	0.02		38	0.10	0.02	
31 10.0N	48	0.10	0.01	30 51.0N	47	0.13	0.04	30 30.0N	48	0.12	0.04
120 54.4W	63	0.12	0.03	121 34.5W	61	0.29	0.16	122 09.0W	63	0.27	0.16
	77	0.20	0.10		75	0.26	0.21		77	0.25	0.16
	96	0.30	0.00		93	0.09	0.09		96	0.16	0.10
	118	0.12	0.04		116	0.18	0.00		119	0.08	0.06
	137	0.05	0.06		135	0.01	0.02		138	0.02	0.03
	165	0.00	0.02						167	0.00	0.02
	193	0.00	0.01								

	DEPTH	CHL A	PHAEAO		DEPTH	CHL A	PHAEAO		DEPTH	CHL A	PHAEAO
STATION 93110	1	0.05	0.00	STATION 93120	1	0.10	0.00	STATION 93130	2	0.07	0.01
04/02/78	11	0.06	0.00	04/02/78	11	0.13	0.00	04/02/78	12	0.07	0.01
0418 GMT	30	0.06	0.00	1022 GMT	30	0.08	0.00	1646 GMT	40	0.08	0.01
54	0.07	0.01		29 49.0N	56	0.08	0.00		64	0.07	0.01
30 09.6N	63	0.09	0.01	123 35.0W				29 29.0N	83	0.15	0.00
122 54.7W	72	0.11	0.02					124 14.0W	98	0.21	0.04
	86	0.13	0.05						111	0.26	0.13
	100	0.22	0.14						130	0.31	0.20
	124	0.21	0.17						149	0.15	0.10
	142	0.12	0.08						173	0.05	0.04
	165	0.05	0.03						196	0.01	0.02
	193	0.00	0.02								

	DEPTH	CHL A	PHAEAO		DEPTH	CHL A	PHAEAO		DEPTH	CHL A	PHAEAO
STATION 93140	1	0.04	0.00	STATION 93150	2	0.00	0.01	STATION 93160	1	0.06	0.01
04/02/78	10	0.04	0.00	04/03/78	11	0.00	0.01	04/03/78	11	0.06	0.01
2303 GMT	39	0.05	0.00	0452 GMT	30	0.00	0.01	1022 GMT	30	0.07	0.02
	62	0.07	0.00		53	0.01	0.01		54	0.08	0.01
29 09.0N	81	0.10	0.02	28 50.4N	63	0.01	0.01	28 33.2N	64	0.08	0.01
124 53.0W	95	0.14	0.04	125 33.6W	72	0.01	0.01	126 10.7W	73	0.08	0.01
	109	0.17	0.11		86	0.00	0.02		87	0.10	0.03
	128	0.26	0.17		100	0.03	0.07		101	0.12	0.05
	147	0.18	0.10		122	0.07	0.20		125	0.20	0.11
	170	0.07	0.04		142	0.02	0.09		143	0.13	0.07
	193	0.02	0.01		165	0.00	0.03		166	0.06	0.04
	217	0.00	0.00		193	0.01	0.01		194	0.03	0.02

	DEPTH	CHL A	PHAEAO		DEPTH	CHL A	PHAEAO		DEPTH	CHL A	PHAEAO
STATION 93170	1	0.08	0.01	STATION 93180	1	0.00	0.01	STATION 93190	1	0.03	0.02
04/03/78	11	0.09	0.01	04/03/78	10	0.01	0.00	04/04/78	11	0.05	0.01
1624 GMT	39	0.08	0.01	2242 GMT	62	0.00	0.01	0427 GMT	39	0.05	0.01
	62	0.10	0.01		81	0.07	0.04		63	0.06	0.01
28 10.4N	81	0.10	0.01	27 50.8N	95	0.03	0.00	27 30.5N	82	0.05	0.02
126 52.0W	96	0.11	0.04	127 30.9W	109	0.00	0.02	128 09.8W	96	0.05	0.02
	109	0.15	0.07		128	0.01	0.01		110	0.07	0.04
	128	0.26	0.15		146	0.01	0.03		129	0.18	0.13
	147	0.15	0.09		169	0.01	0.03		147	0.16	0.11
	171	0.05	0.03						171	0.07	0.03
	194	0.02	0.01						194	0.02	0.02
	218	0.00	0.00						218	0.01	0.00

	DEPTH	CHL A	PHAEAO		DEPTH	CHL A	PHAEAO		DEPTH	CHL A	PHAEAO
STATION 93200	1	0.07	0.01	STATION 93180	1	0.00	0.01	STATION 93190	1	0.03	0.02
04/04/78	11	0.07	0.01	04/04/78	10	0.01	0.00	04/04/78	11	0.05	0.01
1031 GMT	39	0.08	0.01	2242 GMT	62	0.00	0.01	0427 GMT	39	0.05	0.01
	63	0.08	0.02		81	0.07	0.04		63	0.06	0.01
27 10.4N	82	0.10	0.04						110	0.07	0.04
128 48.9W	96	0.13	0.05						129	0.18	0.13
	110	0.12	0.05						147	0.16	0.11
	129	0.14	0.09						171	0.07	0.03
	148	0.15	0.14						194	0.02	0.02
	171	0.10	0.08						218	0.01	0.00
	195	0.04	0.04								
	218	0.01	0.02								

	DEPTH	CHL A	PHAEAO		DEPTH	CHL A	PHAEAO		DEPTH	CHL A	PHAEAO
STATION 95029	0	0.13	0.05	STATION 97030	0	0.34	0.02	STATION 97035	1	0.18	0.02
05/30/78	10	0.22	0.02	04/04/78	10	0.40	0.04	04/05/78	11	0.17	0.00
0353 GMT	30	0.85	0.17	2347 GMT	20	0.57	0.13	0500 GMT	31	0.26	0.04
	40	0.59	1.40	32 15.9N	30	1.27	0.24		40	0.42	0.12
32 36.1N	55	0.27	0.28	117 07.0W	50	0.42	0.27	32 05.5N	55	0.81	0.25
117 15.2W	70	0.14	0.17					117 27.5W	69	0.25	0.16
	96	0.03	0.07						93	0.07	0.09
	116	0.02	0.08						113	0.02	0.06
	136	0.01	0.06						132	0.01	0.04
	156	0.01	0.04						151	0.01	0.03
	186	0.00	0.05						179	0.01	0.02
	221	0.00	0.04						212	0.01	0.02

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	DEPTH	CHL A	PHAEAO		DEPTH	CHL A	PHAEAO		DEPTH	CHL A	PHAEAO
STATION 97040	0	0.16	0.02	STATION 97050	1	0.17	0.01	STATION 97060	0	0.13	0.00
04/05/78	9	0.14	0.04	04/05/78	11	0.12	0.02	04/06/78	10	0.12	0.01
0909 GMT	27	0.16	0.04	1731 GMT	35	0.16	0.04	0014 GMT	29	0.13	0.01
	37	0.23	0.09		45	0.15	0.06		59	0.16	0.02
31 56.0N	50	0.67	0.19	31 33.6N	60	0.39	0.18	31 15.5N	53	0.19	0.04
117 48.0W	64	0.32	0.27	118 32.5W	75	0.35	0.16	119 10.0W	68	0.43	0.13
	86	0.15	0.16		99	0.13	0.21		91	0.27	0.18
	104	0.06	0.09		119	0.03	0.06		110	0.17	0.18
	122	0.03	0.05		138	0.03	0.02		129	0.06	0.11
	140	0.01	0.04		168	0.01	0.02		147	0.01	0.04
	167	0.01	0.08		198	0.00	0.03		175	0.00	0.03
	198	0.01	0.03		237	0.01	0.02		207	0.00	0.01

	DEPTH	CHL A	PHAEAO		DEPTH	CHL A	PHAEAO		DEPTH	CHL A	PHAEAO
STATION 97070	0	0.08	0.00	STATION 97080	1	0.09	0.00	STATION 97090	1	0.08	0.00
04/06/78	9	0.08	0.00	04/06/78	11	0.08	0.00	04/06/78	11	0.08	0.01
0622 GMT	27	0.07	0.01	1216 GMT	35	0.09	0.00	1823 GMT	31	0.14	0.00
	54	0.11	0.03		65	0.14	0.05		61	0.15	0.03
30 55.0N	62	0.16	0.05	30 35.0N	75	0.31	0.15	30 15.5N	72	0.20	0.03
119 50.5W	76	0.19	0.06	120 31.0W	95	0.25	0.24	121 10.5W	87	0.45	0.26
	89	0.24	0.09		109	0.20	0.12		102	0.35	0.20
	102	0.32	0.19		124	0.17	0.10		142	0.06	0.05
	106	0.32	0.11		154	0.07	0.04		162	0.02	0.03
	137	0.28	0.15		174	0.02	0.03		192	0.02	0.01
	169	0.06	0.04		204	0.01	0.02		222	0.01	0.01
	201	0.01	0.04		238	0.01	0.01				

	DEPTH	CHL A	PHAEAO
STATION 97100	0	0.08	0.00
04/07/78	9	0.08	0.00
0015 GMT	40	0.09	0.00
	67	0.07	0.01
29 55.0N	84	0.12	0.03
121 50.0W	98	0.20	0.06
	111	0.31	0.27
	128	0.15	0.24
	145	0.10	0.07
	171	0.02	0.05
	192	0.01	0.02
	213	0.00	0.01

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	DEPTH	CHL A	PHAEAO		DEPTH	CHL A	PHAEAO		DEPTH	CHL A	PHAEAO
STATION 100030	1	2.57	0.51	STATION 100035	1	0.24	0.06	STATION 100040	1	0.24	0.03
04/22/78	10	5.44	1.33	04/22/78	11	0.24	0.07	04/22/78	11	0.19	0.05
0331 GMT	29	0.22	0.23	0725 GMT	29	0.27	0.12	1051 GMT	29	0.18	0.15
	43	0.09	0.13		39	0.69	0.47		39	0.62	0.23
31 40.5N	58	0.04	0.08	31 30.5N	48	0.59	0.45	31 20.9N	48	0.50	0.36
116 46.5W	72	0.01	0.05	117 07.0W	62	0.23	0.29	117 27.1W	62	0.21	0.13
	85	0.03	0.06		76	0.07	0.11		77	0.11	0.13
	104	0.11	0.12		95	0.03	0.08		95	0.05	0.09
	127	0.17	0.14		118	0.03	0.02		119	0.01	0.04
	154	0.02	0.06		137	0.00	0.04		137	0.01	0.04
	187	0.02	0.05		165	0.00	0.04		165	0.01	0.05
	219	0.02	0.04		192	0.01	0.03		193	0.01	0.03

	DEPTH	CHL A	PHAEAO		DEPTH	CHL A	PHAEAO
STATION 100050	1	0.08	0.01	STATION 100060	1	0.07	0.01
04/22/78	10	0.07	0.02	04/22/78	11	0.07	0.01
1635 GMT	29	0.09	0.01	2219 GMT	31	0.07	0.01
	53	0.13	0.05		53	0.09	0.01
31 00.5N	62	0.27	0.09	30 40.5N	62	0.11	0.03
118 07.0W	72	0.24	0.11	118 47.5W	72	0.13	0.04
	86	0.18	0.15		86	0.17	0.07
	100	0.13	0.12		101	0.12	0.06
	123	0.02	0.04		125	0.14	0.13
	141	0.00	0.05		141	0.07	0.07
	164	0.00	0.02		167	0.00	0.04
	192	0.00	0.03		196	0.00	0.02

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CHLOROPHYLL-A AND PHAEOPHYTIN

CALCOFI CRUISE 7804

	DEPTH	CHL A	PHAEAO		DEPTH	CHL A	PHAEAO		DEPTH	CHL A	PHAEAO
STATION 100080	1	0.11	0.00	STATION 100090	0	0.13	0.00	STATION 100100	1	0.08	0.00
04/07/78	11	0.12	0.00	04/07/78	10	0.09	0.01	04/07/78	11	0.10	0.00
1831 GMT	32	0.11	0.00	1115 GMT	29	0.13	0.00	0527 GMT	30	0.10	0.00
	62	0.15	0.02		57	0.15	0.04		40	0.12	0.00
30 01.0N	72	0.23	0.04	29 40.5N	67	0.22	0.02	29 20.0N	54	0.12	0.02
120 07.0W	88	0.46	0.19	120 47.0W	81	0.40	0.17	121 26.5W	68	0.17	0.04
	103	0.34	0.16		95	0.14	0.09		92	0.45	0.25
	118	0.18	0.12		109	0.11	0.09		111	0.33	0.19
	143	0.03	0.03		132	0.10	0.08		129	0.16	0.13
	163	0.01	0.04		151	0.02	0.03		148	0.06	0.08
	193	0.01	0.01		178	0.00	0.02		175	0.02	0.02
	222	0.00	0.01		206	0.00	0.01		207	0.00	0.02

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CHLOROPHYLL-A AND PHAEOPHYTIN

CALCOFI CRUISE 7804

	DEPTH	CHL A	PHAEO		DEPTH	CHL A	PHAEO		DEPTH	CHL A	PHAEO
STATION 103030	19	4.87	2.87	STATION 103035	0	0.26	0.07	STATION 103040	3	0.10	0.05
04/23/78	29	1.70	1.87	04/23/78	10	0.27	0.05	04/23/78	11	0.11	0.04
1913 GMT	48	0.83	1.25	1600 GMT	28	0.29	0.15	1215 GMT	30	0.10	0.08
31 06.0N 116 24.5W				37	0.32	0.18		40	0.13	0.06	
				30 36.0N	47	0.38	0.21	30 46.0N	49	0.21	0.17
				116 45.0W	61	0.18	0.17	117 04.5W	63	0.32	0.22
					75	0.12	0.16		76	0.19	0.18
					93	0.04	0.08		94	0.07	0.10
					117	0.01	0.05		118	0.02	0.05
					135	0.00	0.04		136	0.00	0.02
					164	0.00	0.02		164	0.00	0.02
					192	0.00	0.03		192	0.00	0.02
STATION 103050	1	0.06	0.09	STATION 107032	30	0.56	0.41	STATION 107035	1	0.55	0.15
04/23/78	10	0.09	0.05	04/24/78	43	0.13	0.23	04/24/78	11	1.22	0.36
0540 GMT	29	0.12	0.03	0141 GMT	53	0.05	0.12	0358 GMT	29	1.38	0.53
30 26.0N 117 44.5W	53	0.17	0.03		67	0.06	0.16		39	0.72	0.38
	63	0.21	0.03	30 25.8N	81	0.09	0.34	30 21.5N	48	0.37	0.26
	72	0.21	0.06	116 11.0W	95	0.09	0.11	116 22.5W	62	0.12	0.13
	86	0.45	0.21		118	0.35	0.25		76	0.06	0.06
	100	0.27	0.19		136	0.04	0.08		95	0.03	0.03
	124	0.07	0.06		165	0.03	0.11		118	0.01	0.02
	142	0.01	0.05		192	0.02	0.10		136	0.02	0.05
	165	0.00	0.07						165	0.01	0.03
	193	0.02	0.04						193	0.02	0.03
STATION 107040	1	0.08	0.06	STATION 107050	1	0.07	0.03	STATION 110035	49	1.15	0.60
04/24/78	11	0.09	0.04	04/24/78	10	0.07	0.02	04/25/78	63	0.24	0.25
0740 GMT	29	0.10	0.05	1328 GMT	29	0.08	0.03	0440 GMT	77	0.15	0.16
30 11.0N 116 42.0W	39	0.13	0.07		38	0.09	0.02		96	0.11	0.09
	48	0.29	0.23	29 50.7N	47	0.11	0.04	29 46.0N	119	0.04	0.09
	62	0.22	0.20	117 22.0W	62	0.13	0.07	116 00.0W	138	0.02	0.06
	76	0.12	0.14		75	0.29	0.24		166	0.04	0.08
	95	0.06	0.06		94	0.15	0.11		194	0.02	0.06
	118	0.02	0.02		118	0.04	0.04				
	137	0.01	0.03		135	0.02	0.03				
	193	0.00	0.03		164	0.00	0.02				
STATION 110040	1	0.82	0.22	STATION 110050	1	0.21	0.09	STATION 113035	1	0.51	0.09
04/25/78	10	1.78	0.89	04/24/78	10	0.22	0.03	04/25/78	9	0.56	0.08
0040 GMT	29	2.37	0.77	1834 GMT	29	0.21	0.04	1457 GMT	29	0.63	0.13
29 53.0N 116 21.0W	38	0.51	0.34		52	0.34	0.00		38	1.58	0.53
	48	0.23	0.20	29 14.9N	61	0.32	0.11	29 12.0N	48	0.56	0.43
	61	0.15	0.13	116 58.2W	71	0.76	0.23	115 38.0W	62	0.27	0.21
	75	0.09	0.12		84	0.50	0.22		76	0.12	0.10
	94	0.04	0.04		98	0.28	0.27		94	0.03	0.07
	116	0.05	0.13		122	0.12	0.18		117	0.02	0.04
	135	0.06	0.06		140	0.03	0.06		136	0.03	0.05
	162	0.02	0.03		164	0.03	0.05		163	0.01	0.05
	191	0.02	0.03		193	0.01	0.07		191	0.02	0.02
STATION 113040	0	0.50	0.08	STATION 113050	3	0.15	0.05				
04/25/78	10	0.50	0.09	04/26/78	11	0.13	0.04				
1817 GMT	28	2.67	0.89	0026 GMT	31	0.17	0.07				
29 02.8N 115 58.3W	38	2.57	1.11		53	0.32	0.26				
	47	2.37	0.77	28 41.5N	62	0.76	0.64				
	61	1.32	0.70	116 56.0W	71	0.38	0.51				
	76	0.49	0.37		85	0.16	0.21				
	94	0.23	0.16		98	0.06	0.12				
	118	0.06	0.14		122	0.04	0.05				
	137	0.07	0.08		141	0.02	0.06				
	165	0.02	0.03		165	0.04	0.01				
	193	0.01	0.03		192	0.04	0.08				

Secchi Disk Observations

CalCOFI Cruise 7804

Stat #	Mo	Dy	Local Time (+8: PST)	Depth (m)	Weather	Clouds Type/Amt
60.052 ⁵	4	19	0848	5	1	8 1
60.055	4	19	1100	14	1	6 7
60.060	4	19	1410	17	2	6 8
67.060	4	18	1056	24	1	0 1
70.060	4	17	1200	20	1	0 3
73.053	4	16	1050	17	6	6 6
73.060	4	16	1500	27	1	8 2
77.065	4	15	1133	13	6	6 8
77.070	4	15	0849	17	1	6 7
80.051	4	14	0924	9	1	6 7
80.052	4	14	1107	8	2	6 8
80.055	4	14	1405	13	1	4 7
83.040 ⁶	4	13	1102	13	2	6 8
83.042	4	13	0908	16	2	6 8
83.070	4	12	1227	26	2	7 8
87.050	4	11	0915	13	2	7 8
87.055	4	11	1300	15	2	7 8
90.037	4	9	1005	22	1	8 1
90.045	4	9	1515	14	0	- 0
90.080	4	7	1158	16	1	8 3
90.110	4	6	1505	29	2	5 8
90.120	4	6	1000	23	1	6 7
90.150	4	5	1440	44	1	3 2
90.160	4	5	0903	31	1	8 5
90.190	4	4	1400	21	1	8 6
90.200	4	4	0921	52	1	6 6
93.040	3	30	1230	15	2	6 8
93.060	3	31	0900	25	1	8 2
93.100	4	1	1255	20	1	8 2
93.130	4	2	0916	24	1	6 7
93.140	4	2	1421	29	1	6 7
93.170	4	3	0900	34	5	6 7
93.180	4	3	1420	48	1	3 4
95.030	3	29	1614	14	1	6 7
97.029	4	4	1430	7	1	4 4
97.030	4	4	1530	14	1	4 7
97.050	4	5	0956	22	1	8 3

Secchi Disk Observations

CalCOFI Cruise 7804

Stat #	Mo	Dy	Local Time (+8: PST)	Depth (m)	Weather	Clouds Type/Amt
97.055	4	5	1256	23	1	8 3
97.060	4	5	1545	28	1	8 3
97.090	4	6	0950	31	1	6 7
97.100	4	6	1529	31	1	8 2
100.050	4	22	0912	30	1	8 3
100.060	4	22	1440	19	1	8 5
100.080	4	7	0914	28	1	8 2
103.029	4	23	1205	5	1	0 1
103.030	4	23	1120	4	1	0 1
110.045	4	24	1340	22	1	6 7
110.050	4	24	1050	15	1	6 7
113.040	4	25	0955	14	1	0 1
113.045	4	25	1328	15	0	- 0

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